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DEVELOPMENT AND INTERNATIONAL ECONOMIC COOPERATION:
TRADE AND DEVELOPMENT

Report on world commodity trends and prospects, with particular emphasis on commodity-dependent developing countries in the light of the outcome of the eighth session of the United Nations Conference on Trade and Development

Report by the Secretary-General of the United Nations Conference on Trade and Development

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I. INTRODUCTION

1. The present report has been prepared in response to paragraph 13 of General Assembly resolution 45/200 of 21 December 1990, in which a request was made to the Secretary-General of the United Nations Conference on Trade and Development (UNCTAD) to submit to the Assembly at its forty-seventh session a report on world commodity trends and prospects, with particular reference to the situation of commodity-dependent developing countries, in the light of the outcome of the eighth session of the Conference, bearing in mind the relevant conclusions of the Committee on Commodities at its fourteenth session.

A. Summary of developments in the commodity situation and outlook since the report to the General Assembly at its forty-fifth session

1. Recent developments

2. Developments since the report by the Secretary-General of UNCTAD to the forty-fifth session of the General Assembly (A/45/442) confirmed how deep-rooted are the variety of factors that have led to the present world commodity crisis. They include sustained pressures for supply to exceed demand, the prevalence of very depressed real commodity prices, recurrent shortfalls in developing countries' export earnings and increasing or at best stagnating dependence on commodity exports in most commodity-producing developing countries, as well as the need to improve the management of natural resources to safeguard the environment.

3. The picture as regards most commodities is one of oversupply combined with a large accumulation of stocks. While there was a more balanced growth of supply and demand in certain minerals and metals as well as in vegetable oils and oilseeds, oversupply was particularly visible in the case of agricultural commodities. This trend has been the result of a combination of factors. In developed countries, overproduction has been encouraged by policies of subsidization of production and exports, notably through agricultural support programmes. According to Organisation for Economic Cooperation and Development (OECD) estimates, the cost of such programmes in all member countries was US$ 320 billion in 1991, a figure more than twice the amount of aggregate export earnings from all non-fuel commodities of developing countries. Technological developments and improved management methods leading to productivity gains have also contributed to increases in supply and quality in both developed and developing countries. In the latter, a tendency to shift resources into the production of exportable commodities, resulting from high debt-service obligations and the implementation of structural adjustment programmes, has added to the commodity oversupply problem.

4. As regards commodity demand, and except in the case of China and South and South-East Asian countries, sluggish economic growth has remained the main constraint on its growth in recent years. In addition, demand for raw

materials has been affected by the long-run tendency for the consumption of commodities per unit for output to decline in developed countries. However, while the pace of decline during the 1980s accelerated for minerals and metals, it slowed down markedly for agricultural raw materials. In developing countries, changes in the consumption of raw materials per unit of GDP were less evident than in the case of developed countries. It is increasingly the importance of industry in GDP, rather than a shift towards more raw-material-intensive branches within industry, which increases raw material demand in developing countries. As regards foodstuffs in developed countries, a low rate of population growth and a significant ageing of the population, leading to a tendency towards a lower per capita food consumption, produced a marginal decline in food consumption. Other factors at work were changes in dietary habits, lifestyles and immigration, determining shifts in consumer preference. Contrastingly, in developing countries per capita food consumption has been growing continuously, but at a decelerating rate in the last two decades. 1/ In Central and Eastern Europe, demand for basic foods has been growing strongly.

5. In real terms 2/ the prices of all commodities declined 3/ in the 1980s except for bananas, manganese ore, nickel, tropical timber and zinc, while price instability, measured in terms of price volatility and in dollar terms, was 35 per cent lower than in the 1970s. Lower prices led to shortfalls in commodity export earnings. For developing countries as a group, non-fuel commodity sector export earnings shortfalls averaged special drawing rights (SDR) 4.4 billion a year between 1980 and 1989. 4/

6. The fall in prices also led to a fall in the share of commodities in world trade from 41 to 24 per cent during the 1980s (see figure 1). Because of their declining role as fuel exporters, developing countries share in total world commodity exports declined, 5/ while it did not change significantly in terms of imports. Developed market-economy countries took an increasing share of non-fuel commodity imports, while that of countries of Eastern Europe declined.

7. The commodity crisis is of particular concern to developing countries, most of which are still heavily dependent on commodities for their domestic production, employment and export earnings - a situation that has remained virtually unchanged for the last 10 years, and in particular in developing America and Africa. 6/ Moreover, finding ways out from that crisis becomes increasingly difficult since, as recent studies 7/ have shown, heavily commodity-dependent developing countries have generally recorded a much poorer growth performance, a lower growth in investment, higher inflation, higher levels of debt and a poorer record in diversifying, owing in most cases, to a lack of human resource development, of infrastructure and of access to investment flows.

8. While developing countries have achieved some progress in increasing the processing of agricultural raw materials and of some minerals and metals such as petroleum, iron and steel or bauxite/alumina/aluminium, results in the area of food products have been less satisfactory. Finance for diversification in

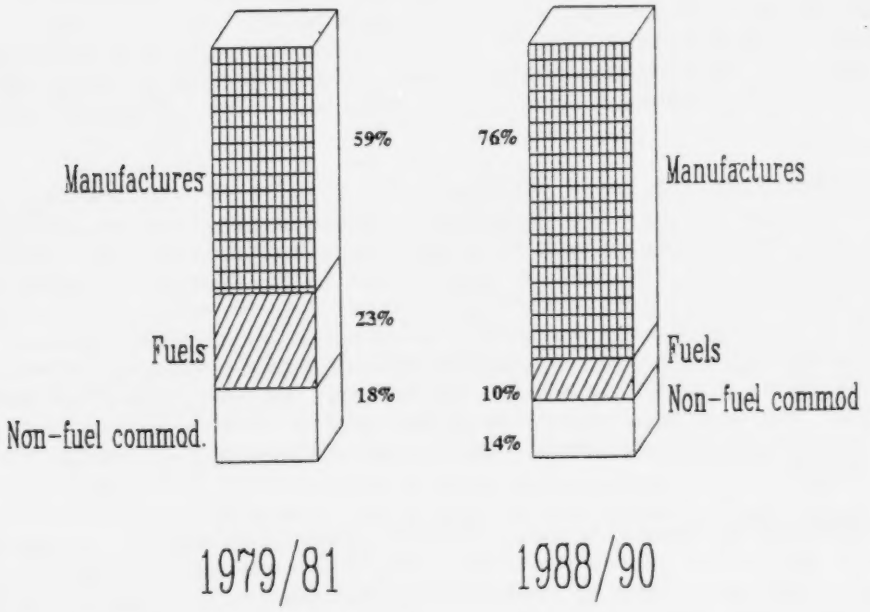
developing countries decreased during the 1980s, mainly as a result of a general decline in private capital flows and of a diversion of the flows away from lower-income highly dependent countries and the commodity sector. Finance for diversification was concentrated on larger, more diversified, less commodity-dependent countries. International compensatory finance remains insufficient to alleviate the increase in shortfalls.

9. Yet another development in recent years is the importance of environmental considerations in the international commodity economy. In particular, it is increasingly recognized that a key element in an environmentally sound management of natural resources is for prices of all final products to reflect fully the costs of preventing or compensating for environmental degradation and pollution.

Figure 1. Composition of world trade

Chart I.1

Composition of world trade



U.N. trade statistics, Comtrade, 1979-90.

2. Outlook

10. In the absence of concerted action at the national and international levels, the outlook for commodities in the years to come is bleak, with supply exceeding demand and prices remaining depressed for most commodities.

11. In addition, new factors will complicate the balance, notably on the demand side. Among them are changes taking place in countries of Central and Eastern Europe and the Commonwealth of Independent States. Their import demand from developing countries plunged by about one half in 1991, a trend that is likely to continue during the transition period. On the other hand, demand may rise in the longer term for tropical and agricultural products. Regional trading arrangements among developed countries, such as the Single European Market that will come into effect by 1 January 1993, the creation of a European Economic Space, or the North American Free-Trade Agreement between the United States of America, Canada and Mexico are developments that may accentuate access problems for commodities from non-member countries. Demographic changes, such as low and even stagnant population growth in developed countries, as well as changes in the age structure of populations, will continue to influence the consumption of commodities. Equally, environmental issues nationally, as well as internationally, will undoubtedly continue to have an impact on commodity production, consumption and trade; in particular, restrictions in developed countries on chemical fertilizer and pesticide use, the increasing importance of markets for recycled materials, and increasing concerns about tropical forests or the depletion of natural resources may have important effects on supply and demand. South/South trade resulting from arrangements such as the Latin American Southern Cone Common Market (MERCOSUR), the strengthening of the Andean Pact, the Association of South-East Asian Nations (ASEAN) and the Caribbean Community (CARICOM), and the creation of an African economic community, have a potential of increasing demand for commodities through trade creation at the interregional level.

12. The bleak outlook for commodities may jeopardize many developing countries' recovery efforts, particularly in heavily commodity-dependent Africa. The challenge for the international community lies in responding effectively to the structural commodity crisis. Agreed commitments on commodities reached at the eighth session of UNCTAD are the starting point in the direction of concrete actions to face that challenge.

B. Summary of agreed commitments on commodities at the eighth session of the United Nations Conference on Trade and Development

13. UNCTAD held its eighth session at Cartagena de Indias, Colombia, from 8 to 25 February 1992. The Conference adopted the final document, "A New Partnership for Development: The Cartagena Commitment", in which agreement was reached on the need for sound, compatible and consistent policies at the national and international levels for the solution of problems in the commodity field.

1. Goals

14. Bearing in mind the broad aims of the Integrated Programme for Commodities, the Conference agreed that the international community should pursue the goals of: (a) improving the functioning of commodity markets by reducing the distortions affecting supply and demand; (b) optimizing the contribution of the commodities sector to development by, inter alia, working towards greater cost-effectiveness and productivity, thereby enhancing competitiveness; (c) achieving a gradual reduction in excessive dependence on the export of primary commodities through horizontal as well as vertical diversification of production and exports; (d) improving market access for commodity products through a progressive removal of barriers to international trade; (e) improving market transparency; and (f) ensuring proper management of natural resources with a view to achieving sustainable development.

2. Policies and measures

15. In order to accomplish such goals, agreement was reached on the need to implement a range of policies and measures.

16. With respect to producer and consumer cooperation, the reinforcement and improvement of cooperation between producers and consumers of individual commodities was urged with a view to achieving an optimal functioning of commodity markets through improved market transparency. The need to pursue substantive negotiations between producers and consumers and to pay particular attention in this respect to the agreements on cocoa, coffee, sugar and tropical timber was also recognized.

17. In relation to national commodity policy, the Conference recognized that domestic policy and an institutional environment that encourages diversification and enhances competitiveness is required for countries to improve the contribution of the commodity sector to development. For that purpose, comprehensive commodity-sector strategies should include a national environment encouraging the mobilization of domestic and international finance, the provision of specific incentives to encourage private enterprise and private investment, the development and maintenance of commodity-related infrastructures, provision of support services and training for human resource development and support for commodity research arrangements. Measures should also aim at the improvement of competitiveness of traditional commodity exports, the encouragement of horizontal and vertical diversification, as well as pay particular attention to the financial and physical support structures for trading commodities.

18. In order to complement and support national commodity policies, the Conference also recognized the need for international cooperation, with support taking forms such as:

(a) Developed country policies conducive to global growth and stability;

(b) Appropriate support to national commodity policies in developing countries and in countries undergoing transition to a market economy, including through the provision of adequate and appropriate financial and technical cooperation for commodity development;

(c) Improved market access conditions for commodities through the removal of barriers as well as through a substantial and progressive reduction of types of support that induce uncompetitive production;

(d) Free flow of information and science to allow innovation and transfer of technology, on agreed terms and conditions;

(e) Adequate finance for diversification through official bilateral and multilateral resources, as well as private resources, including private investment;

(f) Support for reducing excessive commodity dependency;

(g) Consideration of new, or improvements of existing, mechanisms dealing with commodity-related shortfalls in export earnings of developing countries;

(h) Exploration of new approaches to minimize risks arising from commodity market fluctuations;

(i) Improvements in the efficiency and transparency of operation of price formation mechanisms with a view to avoiding market manipulation.

19. In relation to the Common Fund for Commodities, agreement was reached, inter alia, to urge maximum participation in the Fund, full exploitation of its resources, increase in the resources of the Second Account, accelerating the consideration of project proposals such as those for diversification or for financing through the Second Account and making this Account fully operational as soon as possible.

20. Sustainable development completes the range of policies and measures at the national and international levels agreed upon in the commodity field. Recognizing that commodities are an important aspect of sustainable development, a number of subjects that could be pursued were mentioned, inter alia, the manner in which prices of natural commodities could reflect environmental costs and resource values; the improvement of competitiveness of natural products; ways by which development of the commodity sector, including through diversification, and environmental concerns could be made mutually reinforcing; as well as additional international financial and technical support to developing countries for the dissemination of technologies to cope with environmental problems.

3. A world commodity conference

21. The recognition, during the eighth session of the Conference, that the prevalence of declining real prices for most commodities, the continuing heavy dependence of developing countries in general on commodity exports for their foreign exchange earnings, and distortions in commodity markets require a comprehensive analysis and a new and forward-looking approach led to agreement on the proposal made by Colombia to consider convening a world conference on commodities, which would bring together producers, consumers, marketing enterprises and other market actors and would be organized by UNCTAD. Recognizing that such a conference could contribute to shaping a coherent international commodity strategy, which takes into account the specific problems of selected commodity sectors, the Conference decided to invite the Secretary-General of UNCTAD to hold consultations on the question of a world conference on commodities.

22. The Conference also requested, through the Trade and Development Board, the Standing Committee on Commodities to undertake a comprehensive analysis regarding commodity policy and explore new, market-oriented approaches to commodity policies. Such discussions should aim at finding ways and means for achieving a better functioning and enhanced transparency of commodity markets, greater diversification of the commodity sector in developing economies within a macroeconomic framework that takes into consideration a country's economic structure, resource endowments and market opportunities, and better management of natural resources that takes into account the necessities of sustainable development.

23. Subject to a positive outcome of the consultations of the Secretary-General of UNCTAD and of the deliberations in the Standing Committee on Commodities and to both showing a large degree of common understanding about the desired results of such a conference, it further agreed that the Trade and Development Board should decide on an invitation to the General Assembly of the United Nations to convene a world conference on commodities under UNCTAD auspices.

24. At the second part of the thirty-eighth session of the Trade and Development Board, held after the Conference, a mandate was given to the Standing Committee on Commodities through its new terms of reference to "assist the Board in assessing the question of a world conference on commodities" (para. 6 of the terms of reference, see annex I).

4. The role of the United Nations Conference on Trade and Development

25. Consensus was reached at the Conference on the role UNCTAD should play in the commodity field. UNCTAD remains the principal forum and should continue its efforts to play its mandated role of facilitating the coordination of the activities of all bodies involved in the commodity field. The establishment of the terms of reference for the Standing Committee on Commodities (see annex I) at the second part of the thirty-eighth session of the Trade and Development Board specified this role in more detail.

II. RECENT DEVELOPMENTS IN THE FUNCTIONING AND TRANSPARENCY OF COMMODITY MARKETS

A. Trends in supply, demand, stocks, prices and trade of commodities

26. As already indicated, the dominant features for many commodity markets in the recent period were the persistence of a situation of oversupply combined with large accumulations of stocks, as well as the prevalence of very depressed real commodity prices by historical standards. The following discusses the evolution in supply/demand patterns, prices and trade for the main agricultural as well as mineral and metal commodities.

1. Basic foods

27. The world markets for wheat, bovine meat and sugar were generally characterized during the past 10 years by a situation of oversupply, while production and consumption of rice and fish were generally in balance. The price index for basic foods fell in real terms by 38 per cent over the period. Wheat production grew steadily to a record of 599 million tonnes in 1990/91 and decreased in 1991/92 to an estimated level of 547 million tonnes, mainly because of a sharp drop of output in the Commonwealth of Independent States (see figure 2). Consumption also increased over the period and currently exceeds production by 22 million tonnes, generating a small decline in stocks. The growth in bovine meat production over the past 10 years was slow but nevertheless faster than that of a stagnating consumption, while the European Economic Community (EEC) intervention stocks remained the largest and the most influential part of the market. With respect to sugar, the 1991/92 crop cycle seems likely to generate another surplus of 0.5 million tonnes, after a decade of persistent oversupply and high stock levels (see figure 3).

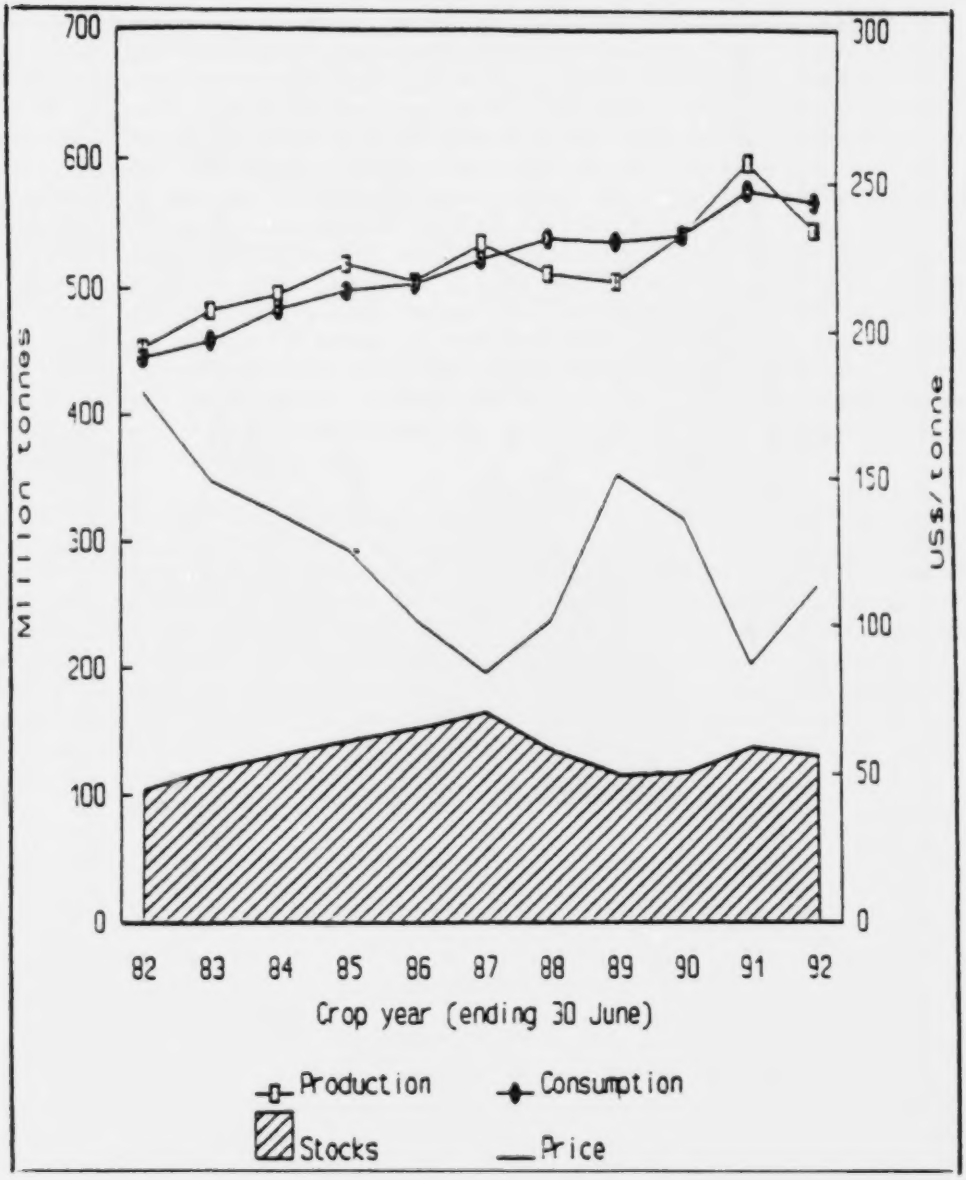
28. Regarding rice, supply and demand steadily increased during the period to 518 and 512 million tonnes respectively in 1991. It is expected that many low-income food deficit countries will continue to face constraints in meeting the consumption requirements of their people in 1992. The world catch of fish grew significantly between 1981 and 1991 from 72 million tonnes to a level near 100 million tonnes. This rapid increase seems to be related to the creation of a 200 mile-limit exclusive economic zone, the use of factory ships and the expansion of aquaculture.

29. On the exports side, the share of basic foods in non-fuel commodity exports by developing countries increased during the 1980s, mainly because of a fast growth in basic foods exports from South-East Asia. Fishery exports, the most dynamic component of world trade in basic food items, accounted for a large part of this rapid rise. Regarding wheat and wheat flour, EEC became the world's largest exporter with 32 per cent of the world market at the end of the period, with the United States falling to second place with 30 per cent of the world market. Thailand increased its share of world rice exports from 20 to 33 per cent over the period, with EEC also expanding its share

considerably, while big falls were experienced in the shares of the United States, China and Myanmar. In respect of bovine meat, the EEC, Australia, the United States, New Zealand and Argentina accounted for over 70 per cent of total world exports in 1991.

30. In respect of imports, the share of basic foods in non-fuel commodity imports by developing countries decreased, reflecting lower relative prices. On the world market for sugar, there was a clear shift in imports from developed to developing countries, while the principal importers of other food products remained basically the same: Russian Federation for cereals, Japan for fisheries, Italy for live animals and meat.

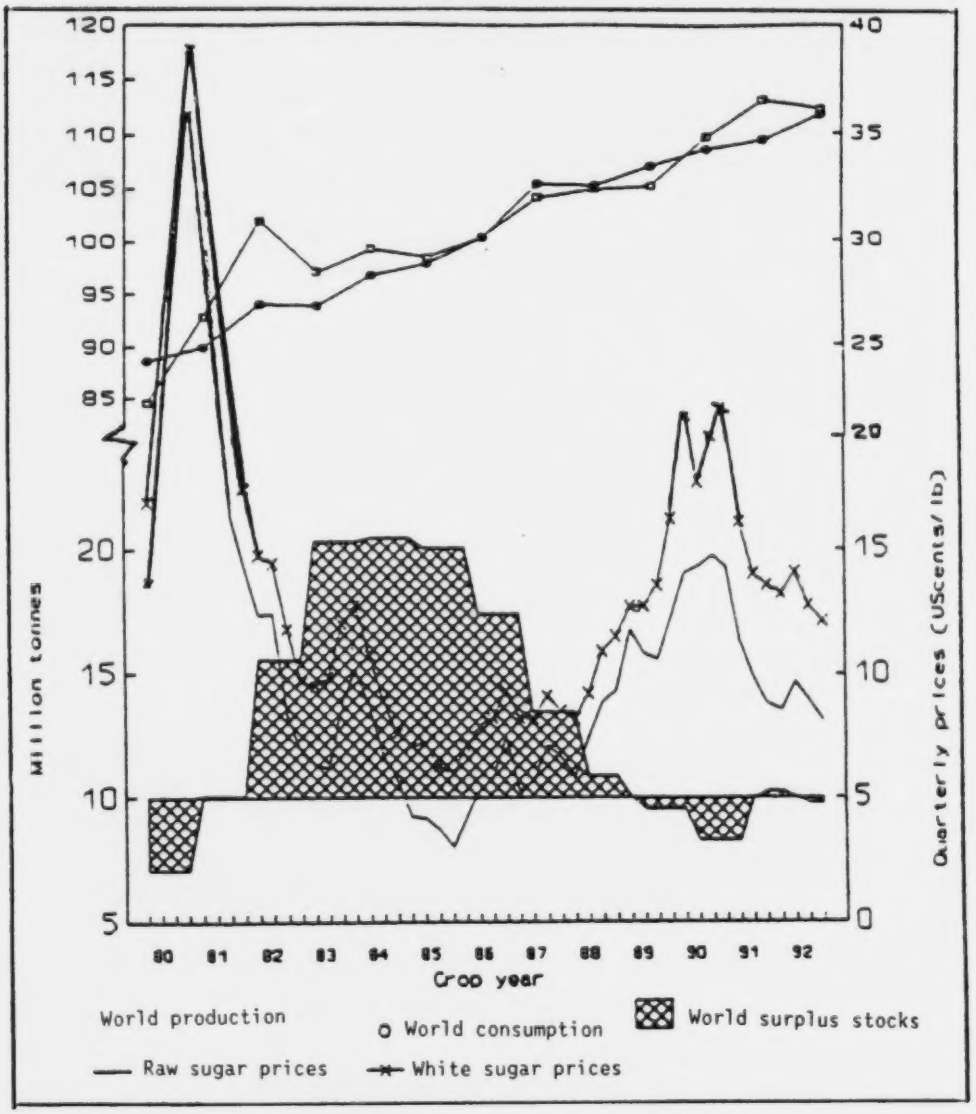
Figure 2. World production, consumption, stocks and price of wheat a/



Source: International Wheat Organization.

a/ Consumption and production for 1992 are estimates. Price: Argentina, trigo pan, F.O.B.

Figure 3. World production, consumption, stocks and price of sugar a/



Source: International Sugar Organization (ISO).

a/ Consumption and production for 1992 are estimates.

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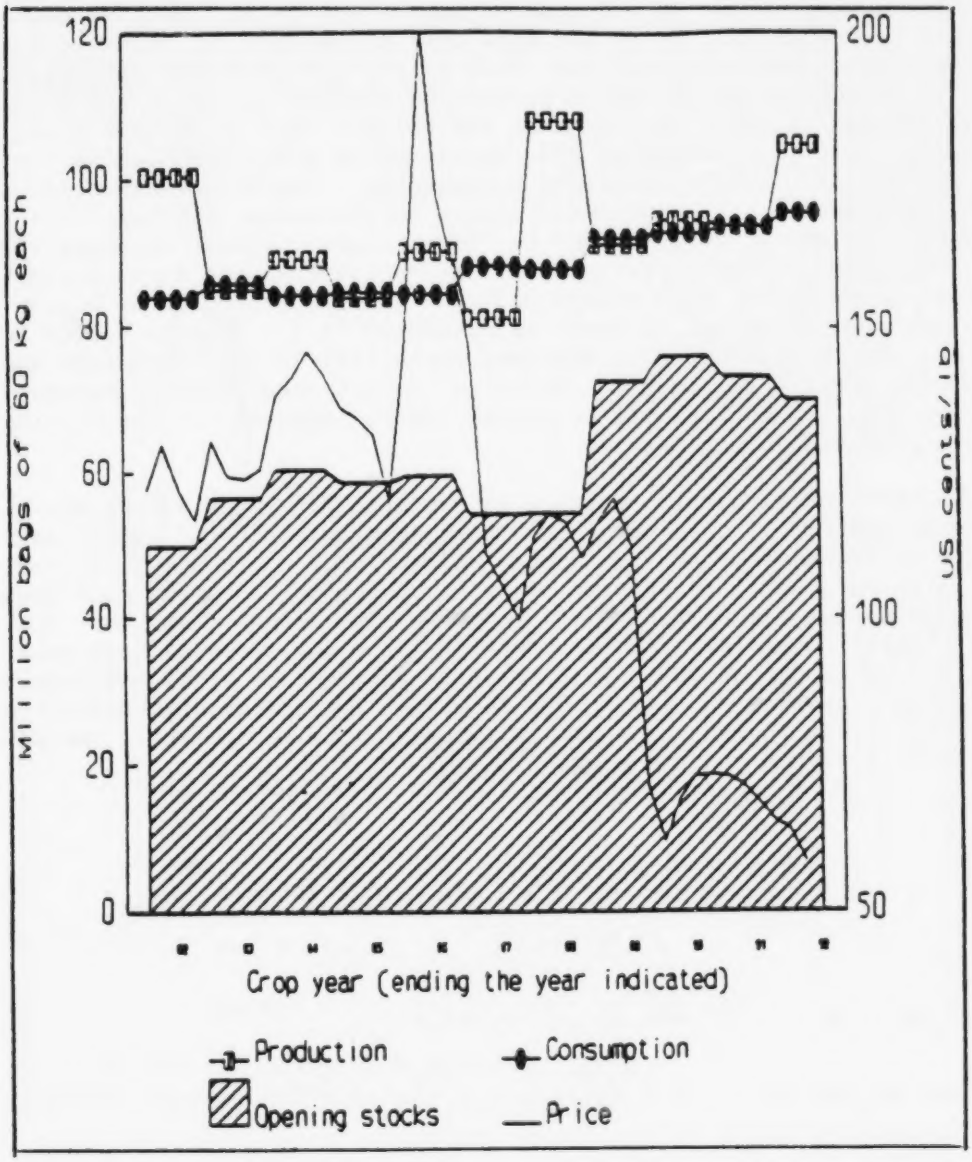
2. Tropical beverages

31. The world markets for coffee, cocoa and tea were characterized by a persistent excess of supply over demand during the past 10 years, with huge accumulations of stocks in the case of coffee and cocoa. Real prices of tropical beverages fell by 52 per cent over the period, the highest drop of any non-fuel commodity group, and cocoa prices are currently at their lowest level in 17 years. World coffee production reached a peak of 108 million bags in 1987/88 and is still very high at 103 million bags in 1991/92 (see figure 4). Coffee consumption also continued to grow, reaching 95.7 million bags in 1991/92. Stocks of coffee accumulated steadily in both exporting and importing countries, in particular rising in the latter following the suspension of export quotas under the International Coffee Agreement (1983) in 1989. Regarding cocoa (see figure 5), production has exceeded consumption for the last seven years, with stocks mounting to well over half of world grindings. World output of cocoa is estimated at 2.3 million tonnes for 1991/92. It is expected that the crop cycle 1991/92 could generate the first production deficit in 8 years. World tea output grew steadily between 1981 and 1991 from 1.9 to 2.5 million tonnes, mainly because of productivity gains in most producing countries.

32. In terms of exports, the share of tropical beverages in the non-fuel commodity exports by developing countries contracted in the 1980s, mainly because of relative price variations. The role of South and South-East Asia in developing countries' exports of tropical beverages became more important, its market share rising from 14 to 20 per cent. At the same time, the share of developing countries in world trade of processed tropical beverages decreased in favour of OECD countries. On the imports side, the importance of developing countries and the former Union of Soviet Socialist Republics as importers of tea increased, while developed countries are still the main importers of coffee and cocoa.

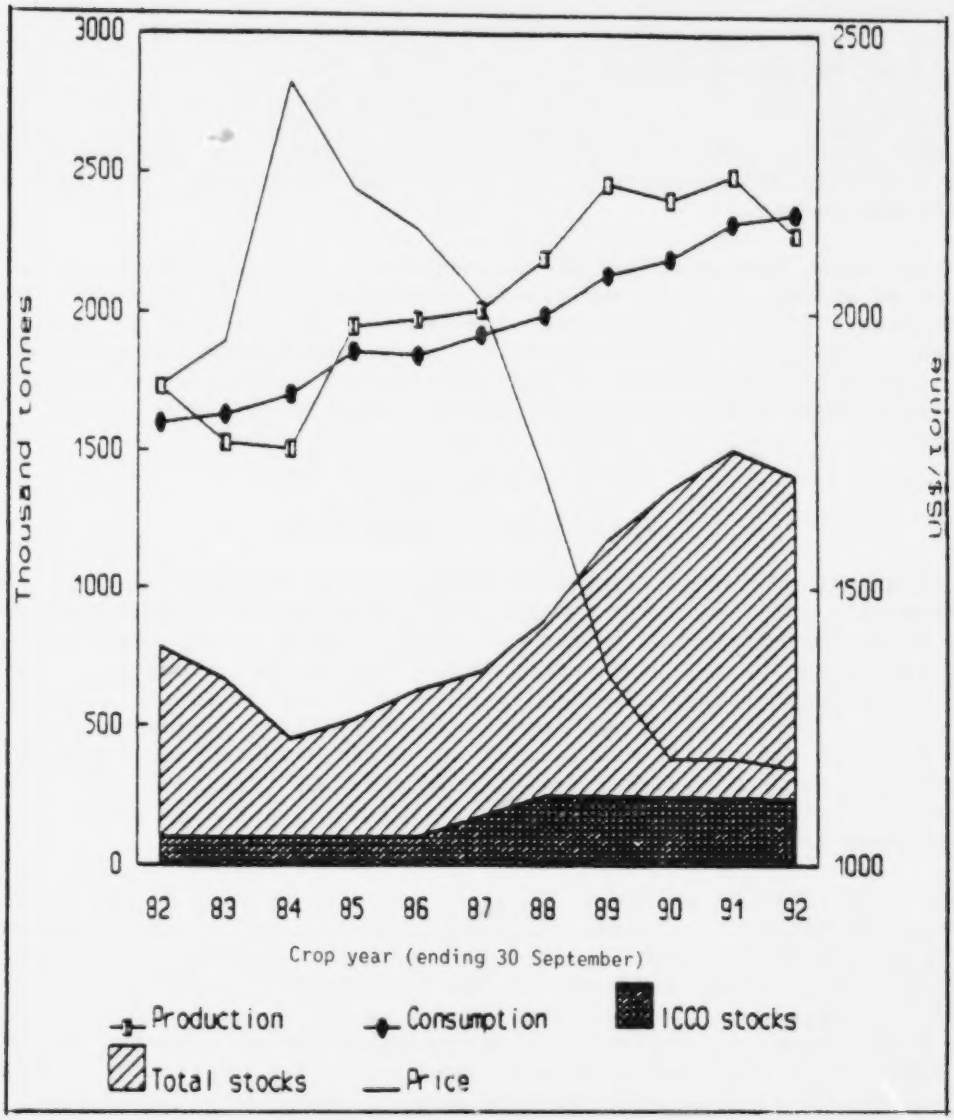
Figure 4. World production, consumption, stocks and price of coffee a/



Source: International Coffee Organization (ICO).

a/ Consumption and production for 1992 are estimates. Price: quarterly average of the composite indicator price 1979 (ICO).

Figure 5. World production, consumption, stocks and price of cocoa a/



Source: International Cocoa Organization (ICCO).

a/ Consumption and production for 1992 are estimates. Price: annual average of the ICCO daily indicator.

3. Vegetable oils and oilseeds

33. Production of palm oil more than doubled between 1981 and 1991, from 5.2 to 11.8 million tonnes. While consumption also grew strongly, stocks, nevertheless, generally increased. Soybean oil production grew much less strongly, production attaining 15.6 million tonnes in 1991. Although consumption growth was at a faster rate than production, stocks were still at a high level. Keeping pace with a strong growth in consumption, world supply of groundnut oil rose by 31 per cent to reach 3.2 million tonnes in 1991. Coconut oil production and consumption remained in balance for most of the decade, with stocks growing at the end of that period. The real price index for vegetable oils and oilseeds at the end of the 1980s was 54 per cent of its level a decade before.

34. In the 1980s, the principal development was a strong decline in the share of the United States in world exports of vegetable oils and oilseeds, from 42 to 28 per cent. There was a parallel increase in the share of EEC from 14 to 25 per cent. Malaysia, which accounts for more than two thirds of world exports of palm oil, and Indonesia reinforced their leading positions as palm oil exporters, with Brazil's share of soybean exports rising from 5 to 13 per cent.

4. Agricultural raw materials

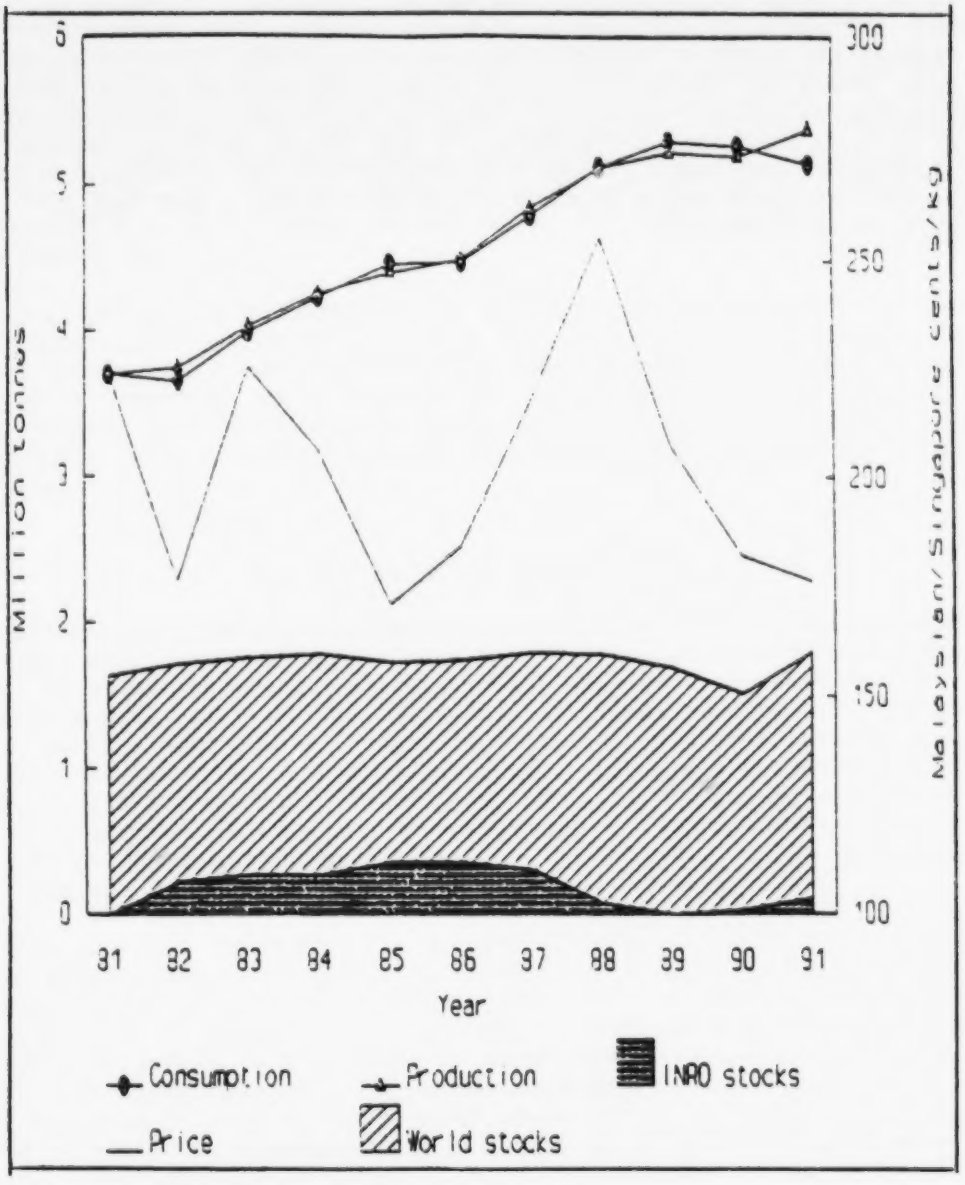
35. World supply of cotton fluctuated widely during the past 10 years, while demand generally increased at a steady rate. This led to large variations in stocks. It is estimated that cotton output will reach an all-time peak of 95.8 million bales in 1992, exceeding consumption by approximately 10 million tonnes. World production of tropical non-coniferous logs increased by one fifth over the 1980s to 158.8 million tonnes, with large increases of output recorded in South-East Asia. In respect of natural rubber (see figure 6), both supply and demand increased steadily between 1981 and 1991, with production and consumption reaching 5.4 and 5.2 million tonnes respectively. Stocks remained in the vicinity of 1.7 million tonnes.

36. While jute consumption slowly declined over the past 10 years, production remained stable except for almost doubling in 1985. India, Bangladesh and China account for 90 per cent of world jute output. Regarding hard fibres, world production of sisal and henequen declined steadily over the past ten years and they appear to have suffered severe market losses. In the case of tobacco, both production and consumption increased steadily during the 1980s and are expected to continue to grow at least until the year 2000. Demand is expected to shrink in developed countries but to increase in developing countries. The real prices of agricultural raw materials fell by 30 per cent over the past decade, a better performance than for most agricultural commodity groups.

37. With regard to trade, the main feature of developing-country exports of agricultural raw materials during the 1980s was a significant decline of

6 per cent in their share in world exports. On the import side, a strong demand in newly industrializing countries of South and South-East Asia pushed the share of developing countries in world imports up by 2.4 per cent. The cotton market changed significantly during the 1980s, with Pakistan and China increasing substantially their share of world exports. The share of the United States, the world's leading exporter, was strongly eroded from 25 to 16 per cent, while EEC became the second largest exporter at 13 per cent. Concerning natural rubber, Malaysia's share of world exports declined from 49 to 38 per cent as a result of a diversification into palm oil of many of its rubber plantations and smallholders. In respect of tropical timber, Malaysia and Indonesia increased their share of world exports by 11 per cent to 76 per cent of world market.

Figure 6. World production, consumption, stocks and price of natural rubber a/



Source: International Natural Rubber Study Group (INRSG).

a/ Price: annual average of the INRO daily market indicator.

5. Minerals and metals

38. The world markets for copper, iron ore, lead and zinc were generally in balance during the past 10 years. Supply and demand of copper grew strongly between 1981 and 1991 (see figure 7) with production reaching 11 million tonnes at the end of the period. Copper consumption followed a similar pattern and grew significantly to 10.85 million tonnes in 1991, owing to demand increases in OECD countries and in industrializing developing countries of Asia. Prices of copper went down in 1991 but still fared better than those of other base metals mainly because of supply disruptions in major producing countries. These went on in the first half of 1992 and provoked a significant price increase despite the fact that demand was not expected to rebound strongly in the main consuming markets. After a severe contraction between 1980 and 1983, production and consumption of iron ore rose steadily as a result of an expanding economic activity in developed market-economy countries - and its impact on steel-consuming sectors - and of an increased competitiveness of primary iron vis-à-vis ferrous scrap in steel making. However, a slight decrease in both supply and demand was recorded in 1991. The growth in the lead market was weaker during the past 10 years than in the 1970s, owing in part to environmental and health concerns. While production and consumption are currently at 5.53 and 5.59 million tonnes respectively, lead demand seems to have stagnated in OECD countries but more than doubled in Asia. Demand for zinc rose steadily over the last 10 years, fuelled mainly by residential, commercial and automotive construction.

39. The aluminium market was characterized between 1981 and 1991 by a sluggish growth in both supply and demand compared with earlier periods, with consumption and production roughly in balance after 1987 and stocks relatively stable. Aluminium output is currently at 18.5 million tonnes. Owing to a major restructuring process begun in the 1970s, Japan's output of aluminium contracted severely during the period, while Australia and Brazil increased their production fourfold and threefold respectively. Demand for aluminium increased by more than 70 per cent in developing countries but stagnated in developed market-economy countries. Manganese production tended to stagnate and in 1990 was 9 per cent lower than its 1980 level, mainly because of a drastic reduction in the use of manganese ore in steel making. For most of the past 10 years, the nickel market was characterized by a steady growth and an excess of demand over supply. World production and consumption reached 907 and 891 million tonnes respectively in 1991, generating a small rise in stocks. During the 1980s, phosphate production persistently exceeded consumption as a result of the dramatic fall in the use of phosphate fertilizers in the major markets (United States, Western Europe and China).

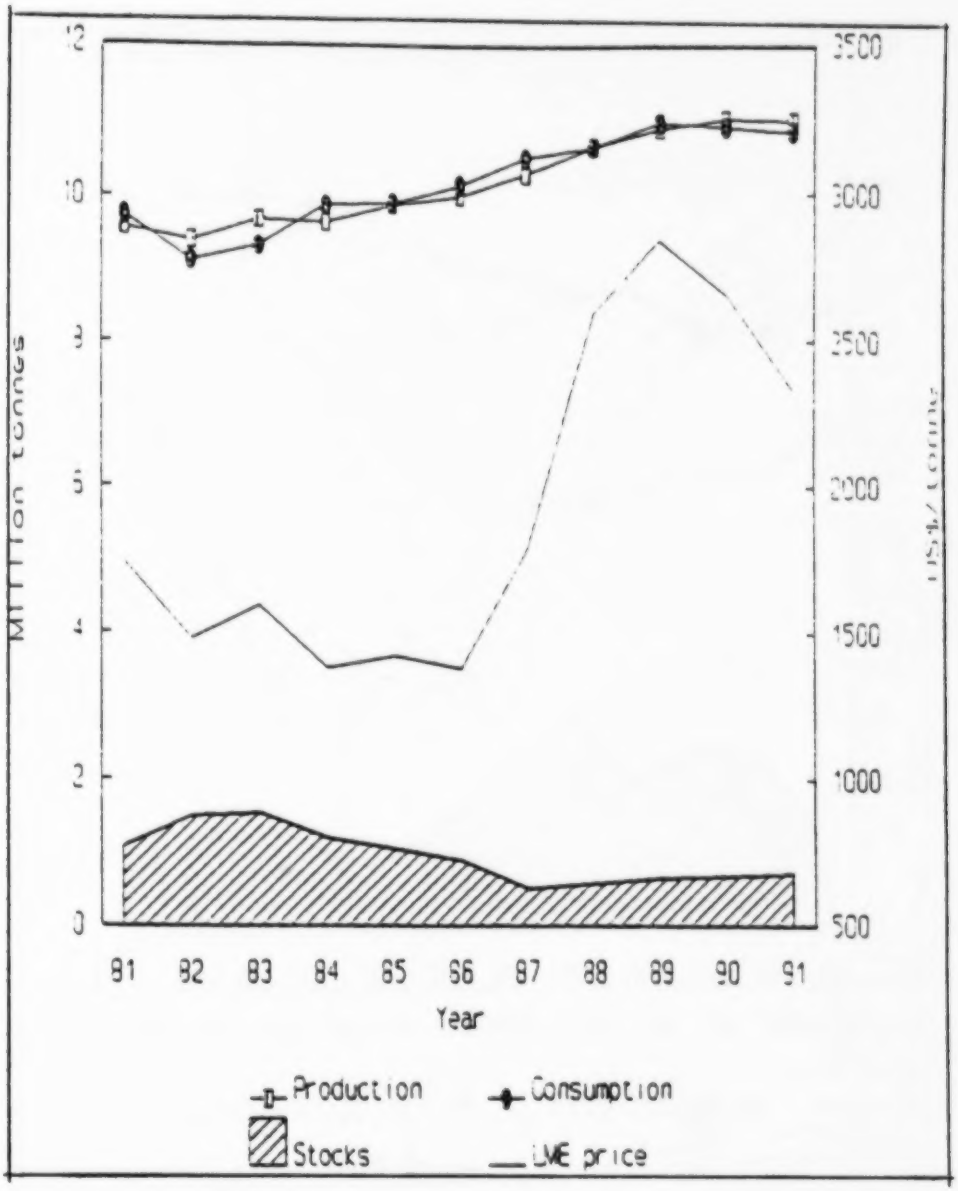
40. In the beginning of the 1980s, tin production exceeded consumption, as a result of which stocks grew dramatically to a peak of 72.7 million tonnes in 1985 (see figure 8). Although production has been lower than consumption since then, stocks have remained relatively high. Brazil and China emerged as first and second world supplier respectively during the last decade. Concerning tungsten, world demand was lower at the end of the 1980s than at the beginning, mainly because of substitution and materials-saving technology.

The tungsten market remained largely oversupplied during the period despite a drastic fall in the total number of mines in operation. During the 1980s, China doubled its production to account for more than half of the total world output. World demand for petroleum fell in the first half of the 1980s, as a result of sharp price increases in 1979/80 and the recession in 1982/83, but grew strongly afterwards, fueled by low prices and a stronger world growth. Supply fell even more strongly than demand in the first half of the last decade but increased more rapidly afterwards (see figure 9). Production and consumption of petroleum reached 3,180 and 3,110 million tonnes respectively in 1991.

41. In general, prices for minerals and metals fared best during the 1980s with a rise of 21 per cent in nominal prices which, however, translates into a fall of 7 per cent in real prices. While nominal prices of copper, iron ore, manganese ore, nickel, lead and zinc were at relatively high levels at the end of the decade compared with the 1980s, prices of silver, tin and tungsten fell to their lowest levels since the early 1970s. The aluminium industry has gone through three major price cycles since the beginning of the 1980s with peaks in 1980, 1983 and 1988 and lows in 1982 and 1985.

42. With respect to trade, the share of mineral fuels in all primary commodity exports by developing countries declined from 75 per cent at the beginning of the 1980s to slightly over half by the end of the decade, following a sharp fall in their relative prices. The former USSR more than doubled its share in world exports of mineral fuels, to become the world's largest exporter at end of the 1980s, with Saudi Arabia in second place. Developing countries, particularly in Africa, lost importance in the world as exporters of minerals and metals. At the same time, minerals and metals took an increased share of developing country non-fuel commodity imports. Regarding iron ore, Brazil reinforced its position as the world major exporter and increased its share to 25 per cent. In the case of nickel, Canada lost its leading role as an exporter of unwrought nickel but overtook Australia as the main exporter of nickel intermediate products. In respect of tin ore and metal exports, Brazil and China increased their share from less than 5 per cent at the beginning of the 1980s to 25 per cent in 1990.

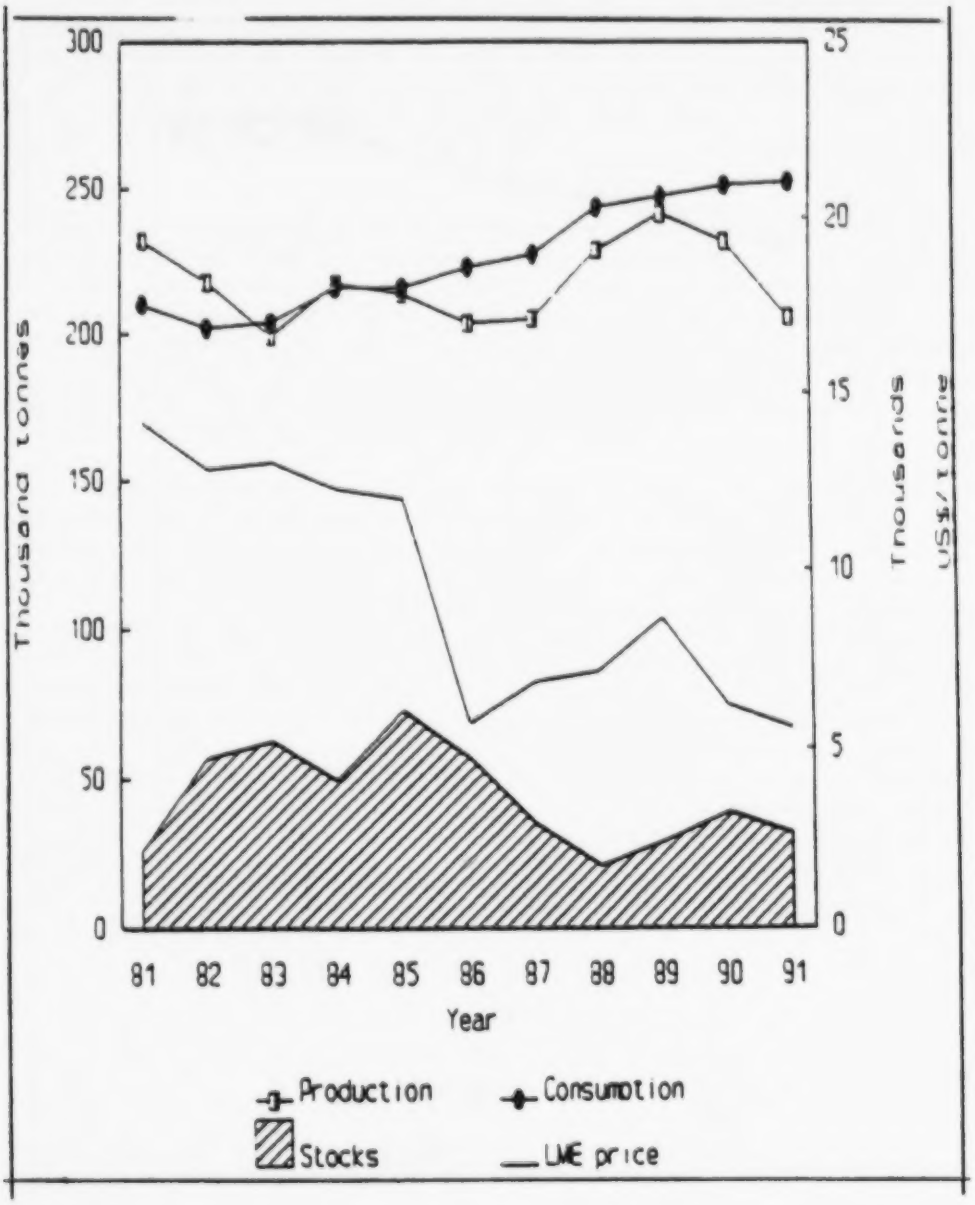
Figure 7. World production, consumption, stocks and price of copper a/



Source: UNCTAD statistical publications.

a/ Consumption and production for 1991 are estimates. Price: London Metal Exchange, grade.

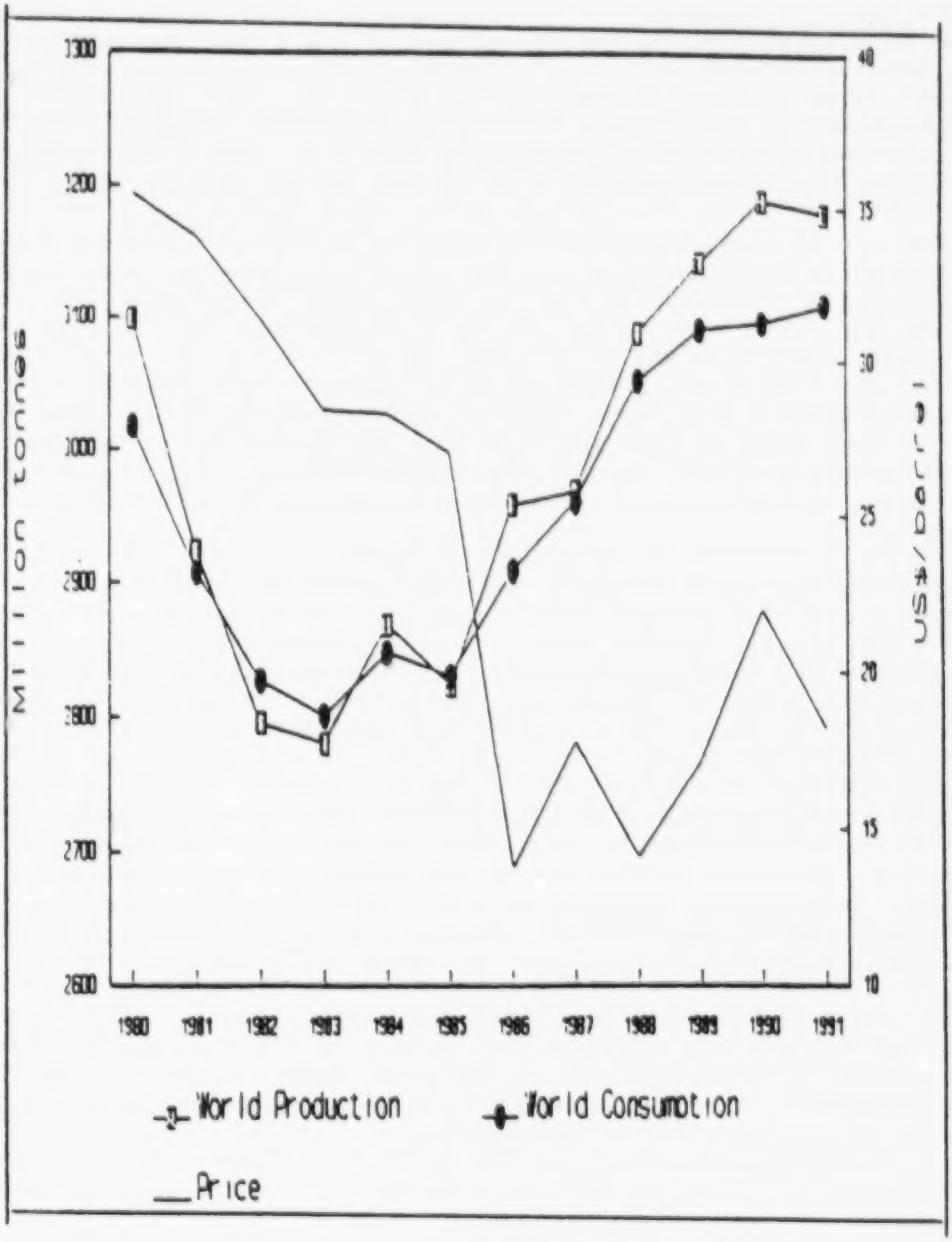
Figure 8. World production, consumption, stocks and price of tin a/



Source: UNCTAD tin statistical publications.

a/ Consumption and production for 1991 are estimates.

Figure 9. World production, consumption and price of petroleum



Source: IEA/OECD and UNCTAD.

B. Recent developments in commodity price formation mechanisms

43. The relative importance of various commodity price formation mechanisms changed considerably during the second half of the 1980s, in large part as a consequence of changing marketing structures. On the one hand, the use of producer prices declined further; on the other, for many commodities, prices were determined in direct deals between producers and consumers. There was no major increase in the use of commodity exchanges for day-to-day transactions but there was an increasing number of futures and options contracts.

44. The role of producer prices - prices that are posted by a few dominant producers especially in the case of metals and are taken as reference prices by smaller ones - declined during the recent past, for example, for cobalt, crude oil and zinc. Changes in pricing mechanisms for fuels was the most significant, whereas in the early 1980s the majority of internationally traded crude oil and fuel products were priced on the basis of posted Organization of Petroleum Exporting Countries (OPEC) prices; by the end of the 1980s the prices of most crude oil and fuel products were determined on the basis of futures markets or organized over-the-counter markets. For a large number of commodities, including specialized minerals and metals, no comparable futures markets exist.

45. Overall, the use of commodity exchange prices where they exist as reference prices for international commodity trade increased, including in direct links between producers and consumers. Concomitantly the number of major traders who traditionally cover their transactions on the exchanges decreased as a result of bankruptcies and mergers. In the case of rubber, activities on the futures market contracted significantly, as was the case in London and Paris for coffee, cocoa and sugar. On the other hand, there has been a significant increase in futures market turnover associated with non-physical-trade-related activities. These participants, especially large financial institutions, do not base their activities on the fundamentals of the specific commodity market, but on the comparative profitability of investment in different financial markets. Their participation is actively promoted by most exchanges, as it increases liquidity and reduces the possibility of price manipulation by one major market participant.

46. All these developments lead to a questioning of whether prices quoted on futures and options contracts actually reflect on a day-to-day basis the supply/demand situation in commodity markets. These prices will reflect the market fundaments when there is significant participation of both buyers and sellers of commodities on the exchanges.

C. Developments in producer and consumer cooperation

1. Agricultural products

47. The United Nations Sugar Conference, 1992, was convened at Geneva from 16 to 20 March for the purpose of negotiating a successor agreement to the International Sugar Agreement, 1987. The Conference established the text of the International Sugar Agreement, 1992, which is open for signature at United Nations Headquarters from 1 May to 31 December 1992 by the Governments invited to the United Nations Sugar Conference, 1992. It is intended that the new Agreement will enter into force on 1 January 1993. For the main features of the International Sugar Agreement, 1992, see annex II.

48. The United Nations Cocoa Conference, 1992, was convened from 21 April to 1 May 1992 to negotiate a new economic cocoa agreement. Discussions of the main features of a new cocoa agreement led to the adoption of a resolution in which the Conference affirmed its desire to continue to negotiate a successor agreement to the International Cocoa Agreement, 1986, and requested the Secretary-General of UNCTAD to make arrangements to reconvene the Conference from 6 to 24 July 1992. A third session of the Conference will take place from 2 to 13 November 1992.

49. The International Wheat Council is examining the question of an extension or renegotiation of the Wheat Trade Convention, 1986, which is due to expire on 30 June 1993.

50. The International Olive Council, at its eighth special session, held in March 1992, recommended to the participating Governments to extend the International Agreement on Olive Oil and Table Olives, 1986, which is due to expire on 31 December 1993. In the same decision, the Council agreed to set up a Special Committee to draw up a draft protocol for the extension of the Agreement, which is to be negotiated at an international conference on olive oil and table olives to be convened within the framework of the United Nations in March 1993.

51. The International Coffee Council, in its resolution 355 (E) adopted on 27 September 1991 at its fifty-seventh session, extended the International Coffee Agreement, 1983, for one additional year, from 1 October 1992 to 30 September 1993. By the same resolution, the Council established a working group, inter alia, to carry out a wide-ranging review of all proposals and ideas on future international cooperation on coffee matters and to report to the Council, which shall decide on the negotiation of a new international coffee agreement with a view to completing it not later than 31 December 1992. A negotiating group and a working committee were established in April 1992 to prepare a new agreement with economic provisions.

52. The International Tropical Timber Council, at its tenth session, in June 1991, extended the International Tropical Timber Agreement, 1983, for a period of two years, to 31 March 1994. At its eleventh session, in December 1991, it made arrangements for preparations for the renegotiation of

the Agreement and, to this end, requested the Secretary-General of UNCTAD to arrange a Conference from 13 to 16 April 1993 and from 21 to 25 June 1993.

53. The International Natural Rubber Agreement, 1987, entered into force definitively on 3 April 1989. The Agreement is due to expire on 28 December 1993 but may be extended for a period of up to two years. Consideration is being given in the Council to renegotiating the Agreement, a decision on which is expected to be taken in December 1992.

54. The International Agreement on Jute and Jute Products, 1989, entered into force provisionally by decision of a meeting held under UNCTAD auspices on 12 April 1991. The duration of the Agreement is five years and it may be extended for not more than two periods of two years each.

2. Minerals and metals

55. The terms of reference for the International Copper Study Group were negotiated at the United Nations Conference on Copper, 1988, which met in two parts, from 13 to 24 June 1988 and from 20 to 24 February 1989, and was attended by 49 States and EEC. Following meetings convened by the Secretary-General of UNCTAD in November 1991 and January 1992, the International Copper Study Group, made up of 18 exporting and importing countries that account for over 60 per cent of world copper trade, was established on 23 January 1992. Its main objectives are exchange of information between the main players of the copper market, assessment of long-term trends, improvement of statistics and coordination of special studies on specific issues affecting the copper economy. The inaugural meeting of the Group was convened by the Secretary-General of UNCTAD at Geneva from 22 to 26 June 1992.

56. An ad hoc review meeting on bauxite was held from 13 to 17 May 1991. Bauxite-producing countries had proposed that a permanent forum be established to promote discussions between producers and consumers on all questions related to the bauxite/alumina/aluminium industry. Following informal consultations among major producing and consuming countries held at Cartagena, Colombia, on the occasion of the eighth session of UNCTAD, it was agreed that the UNCTAD secretariat should convene further informal consultations with producing and consuming countries during the autumn of 1992 with a view to convening a second ad hoc review meeting in the spring of 1993 that would focus on an examination of the need and the level of support for a producer/consumer forum.

57. The fifth session of the International Group of Experts on Iron Ore met from 21 to 23 October 1991. Government officials and a large number of industry advisers from leading companies exchanged views on the current situation and outlook for iron ore.

58. The United Nations Tin Conference, 1988, met from 21 November to 2 December and from 29 March to 7 April 1989. At the latter meeting it

adopted the terms of reference of the International Tin Study Group. As at 31 December 1991, nine countries (Malaysia, Nigeria, Indonesia, Thailand, Greece, Belgium, Luxembourg, Portugal, Netherlands) representing 32.77 per cent of world trade, and EEC had notified their definitive or provisional acceptance of the terms of reference.

59. At its twenty-third session, held from 18 to 22 November 1991, the Committee on Tungsten provided an opportunity for the representatives of government and industry in both tungsten-producing and tungsten-consuming countries to discuss ways to facilitate international consultations on tungsten trade, to improve statistics on tungsten and to follow the evolution of the world tungsten market. The Committee was designated as an international commodity body by the Common Fund for Commodities in 1990 to sponsor project proposals for financing under the Second Account of the Fund. An ad hoc meeting on tungsten took place on 2 and 3 July 1992 to examine the three revised project proposals submitted by the Government of China and the project proposal submitted by the International Tungsten Industry Association .

III. CHANGES IN THE COMMODITY SECTOR WITH PARTICULAR RELEVANCE TO COMMODITY EXPORT DEPENDENCY

A. Productivity developments in the commodity sector

60. A sustained growth of productivity rests on two intricately interwoven factors: the availability of technological innovations and an appropriate economic policy framework. The latter comprises the right market incentives, efficient institutions and an adequate amount and structure of supportive public investments. Producers are only encouraged to employ more efficient technologies if they are persuaded that they can reap the whole or part of the profit the technology yields. Technological innovation, in turn, has two interrelated effects on commodity supply: on the one hand, expansion of production volume (of primary and secondary material), on the other, reduction in costs of production.

61. Empirical evidence of many adjustment programmes suggests that producers in agriculture and mining respond significantly and, in many cases, swiftly to changes in government policies: where the prospects for profit are good, producers innovate, adapt technologies and improve existing practices. 8/ In particular the implementation of integrated packages of reforms in the exchange rate, trade, commodity pricing, commodity tax, credit, public expenditure and institution-building policies can encourage a boost in productivity. Ghanaian cocoa and tea in Sri Lanka are two cases in point. Some private farms in Ghana, for example, are expected to increase yields to as much as 1.5 tonnes from an average of 300 kilogrammes per hectare by using new techniques of vegetative regeneration, clonal seeding, hand pollination and new insecticides. 9/ In Sri Lanka, productivity of tea plantations reacted quickly to changes in prices and exchange rates. In 1990, tea production reached a record level which was to a significant extent attributable to an increase in yield by almost a third in small private-owned farms. At the same time, the producer margin swung from a negative figure to a gain. 10/

1. The contribution of technological developments to increases in productivity

(a) Agriculture

62. The intensification of agriculture based on the employment of new technologies has become the decisive factor in increasing the productivity, stability and efficiency of agricultural production in all regions. This comprises a comprehensive mechanization of agriculture, the enhanced use of inputs such as inorganic fertilizers, pesticides, the introduction of high-yielding and more pest-resistant varieties, as well as the use of certain farm management methods to increase and stabilize yields.

63. Increased yields in developing countries overall occurred in the 1980s. In fact, for most crops grown in both developing and developed countries yield increases have been far more dynamic in the former. Among developing

countries, the increase in yields has been highest South and South-East Asia 11/ and lowest in developing America. Although the proliferation of high-yielding varieties has been uneven, more and more developing countries are increasing production by introducing these plants. In 1982, for example, a new rice variety, IR36, was introduced offering genetic resistance to 15 pests and a growing cycle of only 110 days (compared to 180 days for traditional varieties), thus permitting three crops a year. IR36 is now the most widely grown rice variety in the world.

64. The enhanced use of modern agricultural inputs has been another important factor in lifting yields. Their use has been expanding rapidly, in particular in South and South-East Asia. With the exception of fertilizer consumption in South and South-East Asia, however, the absolute levels of input use have not reached, or even come close to those in the developed countries. 12/ The use of inputs is lowest in Africa, while their growth is slowest in developing America. This reflects, to some extent, the characteristics of land and crops that may not be amenable to the use of certain inputs generally developed with Northern requirements in mind. Nevertheless, social conditions, including land tenure systems, financial requirements and, in particular, skill requirements, as well as the necessity for adequate extension services restrain the level of input use in all developing countries, especially in Africa.

65. There is considerable scope for increasing yields through improvements in farming methods without incurring significant additional costs. These include, inter alia, the choice of the correct planting dates, timing of inputs, optimizing row widths and regular crop rotation. In 1986, Indonesia banned 56 pesticides and promoted, like other countries in South-East Asia integrated pest management. This includes more than just the correct use of pesticides. Farmers are retaught that some pests are their friends and that crop rotation pays off. A recent survey of 90 farms in the Philippines over four growing seasons showed that rice yields on farms practising integrated pest management averaged 5.1 MT a hectare, compared with 4.9 MT on neighbouring farms still employing chemicals. 13/

(b) Mining

66. High technology appears not to have swept into the mining industry at the pace anticipated at the beginning of the 1980s. Furthermore, setting aside exploration, most technological improvements have taken the form of incremental changes in ways of operating existing equipment. This has made it easier for many developing countries to follow suit. Most mineral companies have concentrated on cost cutting and have neglected product and process development. The ways of reducing costs can be divided into four main groups: increased scale of production; mechanization and automatization; improved utilization of mining systems and energy; and process simplification.

67. Exploration is one major area where costs have been substantially cut. During the 1980s, there has been an increasing trend towards the integration of geological, geophysical, geochemical and remote data sensing with the use

of computer-aided statistics and image analysis. In the recent past, new software that turns three-dimensional seismic data into startling topographic models that can be examined from all angles has not only paved the way for the discovery of new deposits, partly in already well-explored areas, 14/ but has helped to pinpoint the place where to drill. This has given rise to a sizeable cut in discovery costs for certain commodities. Several oil companies, for instance, reported that computer-aided exploration had reduced overall funding costs by 40-50 per cent since the mid-1980s. 14/

68. In mining and mineral processing, the major efforts in recent years have centered on the enhanced use of continuous processes, computerization of production and its streamlining and energy conservation. As a result, the Chilean copper mines, for example, have cut mining costs by more than 50 per cent in the 1980s. 15/ Cost cuts are the most important driving force of technological progress at the mining stage. At the mineral processing stage, however, the situation is somewhat different. In general, more attention is being paid to increasing throughput and to controlling recovery and purity with a view to producing qualities that meet customer demand.

69. The drive towards energy conservation has played a prominent role in mining and mineral processing. Electric steel making, once regarded as a method used exclusively for the production of special steels, has evolved into a process of universal application. Major performance improvements were achieved in the 1980s, which boosted furnace productivity by one third and cut power consumption by almost 20 per cent. 16/

70. As easily accessible high-grade mineral concentrations are depleted and many of the new ore deposits are classified as low grade, complex and multimineral bodies, recent progress in metals biotechnology has received special attention in developed and several developing countries. Bacteria have been successfully bred that thrive in acid mine water and release from multimineral deposits metals like copper, zinc, nickel, silver and gold. Bacterial leaching makes it possible to stretch the life of existing mines by recovering deposits previously not exploited at most mine sites and ancient mineral waste dumps. The incorporation of bacterial leaching into the overall operations of mining companies in Latin America, notably in Chile, has shown that metal output could be relatively rapidly increased with marginal additional investment and low outlays for operating costs. Estimates put the cost advantage of bacterial leaching in copper at 40 to 50 per cent. 17/ Moreover, bacterially leached metals do not need smelting. Copper cathodes, for example, can be produced by electroplating copper directly from enriched leach solutions at the mine site. It also offers the advantage of being flexible in scale, unlike copper smelters whose economics of scale require the input of the production volume of several mines.

2. Benefits from advances in technology and cuts in production costs

71. Financial benefits from increased production volume and cuts in costs of production are distributed in principle between producers, suppliers, processors and consumers nationally and internationally. In determining who benefits, much depends on the state of the markets and who controls them. Where governmental intervention or other factors prevent the operation of free market forces and oversupply results, the "unprotected" profitable producers tend to be deprived of all or a sizeable proportion of the additional income generated by the use of new technologies. The maintenance or guaranteeing of high domestic prices has encouraged production of a good number of commodities in OECD countries, so much so that surpluses to domestic requirements have to be exported and subsidies used for their sale. With the exception of dairy products, such export supplies compete with exports from developing countries (e.g. cereals, sugar, vegetable oils and oilseeds, cotton and meat). Moreover, as a result of their domestic policies, the United States and EEC have become net exporters in certain products, for instance, sugar substitutes and sugar, and have increased their shares in world export markets for several other agricultural products. In the 1980s, the export drive of EEC countries almost doubled the EEC share in world grain exports other than rice. The EEC countries also consolidated their position in the world markets for bovine meat. The United States and Canada, in turn, almost tripled their shares in export markets of bovine meat. In contrast, the share of developing countries in world grain markets rose only slightly, and the position in world bovine meat markets shrank by almost a quarter. Where exporters of primary commodities compete in slowly growing markets and technology augments production volumes, the benefits will largely be passed to the consumers who are frequently developed country importers. Where a technology lowers the cost of production while output volume remains unchanged, the benefits will tend to remain with the producers, allowing them to decrease the use of productive resources and to reallocate those for other uses. On balance, even under depressed market conditions, the most efficient producers are going to harvest, as additional income, some of the technological seeds sown; to what extent has to be seen in the light of supply and demand elasticities and the pace of decline of market prices. 18/ For commodities where both income and price elasticity of demand is high (for example for fruit and vegetables) increases in production tend not to depress terms of trade, and technology will have more unambiguous benefits for the producers.

B. Some recent developments in the processing and marketing of commodities

72. Domestic processing of raw materials contributes to a country's development through its functioning as a basis for industrialization and through the higher share of value added contained in processed compared to raw material exports. Analysing the evolution of export shares of various processing chains between 1979-1981 and 1988-1990 at the commodity level suggests that developing countries have in general made significant progress

in the processing of agricultural raw materials. Cotton, jute and leather products have been the most important ones in further processing. 19/ However, the data do not always reveal whether cotton, jute and leather products have been produced from domestic raw material or that which is imported and whether their production has been strongly linked with the rest of the domestic economy or exclusively done in export processing zones. Apart from cotton, jute and leather products, many countries have succeeded in retaining more value added through the export of sawn wood, plywood and paper and paperboard compared to the export of logs, including Indonesia, Equatorial Guinea, Ghana, Guinea-Bissau and Fiji.

73. In the mineral and metals area, virtually all oil exporting countries raised their share of refined compared with crude petroleum exports. In iron ore/steel, 7 out of 12 countries for which this commodity constitutes an important part of their exports raised the share of processed exports with the other 5 of these 12 countries either already having a well-diversified export structure or exporting substantial amounts of other metals in processed form. In bauxite/aluminium, 9 out of 13 developing countries for which such exports represent a substantial part of their foreign exchange earnings succeeded in reaching higher processing stages. Regarding copper, all major exporters except Papua New Guinea export a substantial share in refined form, with Zaire having considerably moved up the processing chain over the last 10 years.

74. Only 6 out of 112 countries under consideration managed to increase significantly the export of food products in higher processing stages, fish being the single most important commodity in this respect followed by vegetable oils and cakes. Countries exporting other traditional food commodities such as cocoa, coffee and sugar at best slightly raised the share of processed forms of these commodities in their export earnings.

75. Beyond the kind, volume and processing stage of a country's commodity exports, the size of a country's export earnings is also affected by the structure of the market on both the demand and supply sides, notably the number of market participants. Commodity markets have frequently portrayed oligopolistic and/or oligopsonistic characteristics, although the number and economic power of buyers and sellers have varied among commodities. Information on ownership and changes in world industry and market structures for individual commodities, while not systematically available at present, indicates that the number of major participants on the demand side of many commodity markets was shrinking during the 1980s, whereas the number of producers and suppliers in these markets was substantially increasing. This has increased the influence of commodity users and traders in price formation through their decisions on stocking and other actions affecting demand.

76. On the demand side, the economic power of large firms has mainly increased through mergers and acquisitions and the installation of processing capacities in new locations. The fact that new entrants - mostly of minor importance - have raised the overall number of firms directly involved in commodity transactions may have slightly softened this process of concentration without, however, significantly slowing down the general trend.

Large firms have especially become more important in the food sector, the tea and cocoa markets being prominent examples in this respect. While in the food and agro-food sectors recent changes have occurred through mergers and acquisitions, market power in the minerals and metals area seems to have been consolidated through expansion. Additional features of the increasing market power of large firms are the widening number of related commodities purchased (e.g. the increased activity of major cocoa-purchasing firms in other food and beverage areas), geographical expansion (e.g. through the acquisition of firms that are well-established in foreign markets and have distribution networks and brand names), and the move to raise vertical integration into final products, thereby acquiring both ownership of brand names and access to new markets.

77. On the supply side, a rising number of sellers in terms of both countries and individual firms can be observed. The latter may be attributed to the deregulation and liberalization of export marketing in many countries, including those undertaking structural adjustment programmes, which have replaced centralized exporting through government agencies, such as marketing boards, by private firms. The comparatively small size and inexperience in international marketing and marketing practices of these firms have favoured the traditional purchasers. Increased links between producers and processors and/or distributors can be observed for a number of commodities, such as rubber, cocoa, fruits and vegetables. In these cases, quality and quantity of production is geared to the specific input needs of a particular processing firm.

78. A major implication of the above-mentioned developments for the functioning of commodity markets is the growing share of commodities being traded directly between buyers and sellers and the concomitant decline in importance of intermediaries. The number of trading houses has been reduced by both mergers and bankruptcy.

C. Changes in export dependency on particular commodities in developing countries

79. The international commodity economy was characterized by two contrasting features during the 1980s. On the one hand, as already indicated, developing countries became less important as commodity exporters in terms of world market shares; on the other, most developing countries remained strongly dependent on commodities for their domestic production, employment and export earnings.

80. Regarding diversification out of primary commodities between 1979-1981 and 1988-1990, the table suggests that apart from South and South-East Asia commodity dependence did not change substantially and that in Africa almost no change has occurred at all. In fact, Africa remains the most commodity-dependent geographical area, with 40 out of 47 countries dependent for more than 70 per cent of their export earnings on commodities; in developing America 17 out of 31 countries have a similar degree of

Table. Extent of commodity dependence by region, 1979-1981 and 1988-1990 a/

A. Share of commodities in total export earnings

		1979-1981			1988-1990		
		<50%	50-70%	>70%	<50%	50-70%	>70%
		(number of countries)			(number of countries)		
OECD countries		17	1	3	17	2	2
Asia and Pacific	West Asia	-	1	9	1	1	8
	South and South-East Asia	2	4	10	10	3	3
	Developing Oceania	1	-	8	-	3	6
Developing America	Caribbean	1	3	7	2	5	4
	Latin America	-	3	17	2	5	13
Africa	North Africa	-	1	4	2	1	2
	Sub-Saharan Africa	-	2	40	1	3	38

B. Share of the two main commodities in total export earnings

		1979-1981			1988-1990		
		<50%	50-70%	>70%	<50%	50-70%	>70%
		(number of countries)			(number of countries)		
OECD countries		19	1	1	20	-	1
Asia and Pacific	West Asia	1	-	9	1	1	8
	South and South-East Asia	9	3	4	10	4	2
	Developing Oceania	2	1	6	2	5	2
Developing America	Caribbean	6	3	2	4	5	2
	Latin America	8	8	4	9	9	2
Africa	North Africa	-	2	3	1	2	2
	Sub-Saharan Africa	3	15	24	4	14	23

Source: UNCTAD secretariat calculations.

a/ Commodities include Standard International Trade Classification (SITC) sections 0-4 (less groups 233, 244, 266, 267), division 68, groups 667, 971 and item 522.56.

dependence. In the Caribbean, developing Oceania and West Asia about half of the countries have substantially reduced the share of commodities in their total export whereas the commodity dependence of four countries in the Caribbean and two countries in developing Oceania increased. In Africa, 8 countries registered a decrease by over 10 percentage points in the share of commodity exports in total export earnings, while in 38 countries the share did not change significantly and in 6 it even increased. In the 31 countries of developing America, only 13 (9 Latin American and 4 Caribbean) showed a significant diversification out of commodities, although they include the three largest countries of the region, that is, Argentina, Brazil and Mexico; in 6 (1 Latin American and 5 Caribbean) the share of commodities in export earnings increased. South and South-East Asia showed the largest relative decrease in commodity dependence. In fact, in some countries the share of non-manufactured exports reached levels close to those of developed market economies.

81. At the individual country level, the most successful examples of countries that significantly reduced their commodity dependency between 1979-1981 and 1988-1990 include Sri Lanka (from 84 to 43 per cent), the Syrian Arab Republic (from 92 to 54 per cent), Morocco (from 75 to 49 per cent), Tunisia (from 65 to 30 per cent), Mauritius (from 71 to 36 per cent), Thailand (from 71 to 40 per cent) and Mexico (from 87 to 54 per cent).

82. Export diversification within the commodity sector - horizontal diversification - can be observed for many countries and across the whole range of products. Although in most cases the newly produced commodities do not as yet account for a large part of export earnings, they indicate the potential for diversification and in some cases have contributed to a decline of a country's heavy dependence on one commodity. An example in this respect is Burundi. The falling coffee prices during the 1980s caused a decrease of the share of coffee in Burundi's export earnings by 10 percentage points, despite an increase of coffee exports in volume terms. However, Burundi managed to make up for the shrinking coffee export earnings through successful horizontal diversification, that is, by more than doubling its export earnings from gold, cereals, rice, tea, crude vegetables and hides and skins.

83. On the other hand, horizontal diversification was most important in the already more advanced economies like Argentina, Brazil, Indonesia and Malaysia. In addition, horizontal diversification can often be observed into commodities that are other countries' traditional exports (cotton, rubber, cocoa, coffee and palm oil) or compete with them (soya competing with other vegetable oils), thereby tending to raise the risk of over-supply on the world market.

84. Many developing countries are heavily dependent on only one or two commodities for their export earnings. In the period 1988-1990, 42 countries - almost two thirds of which were African - out of 113 developing countries depended on one or two commodities for over 70 per cent of their export earnings. Fuels, food products and some metals are the most important single export commodities for the vast majority of these heavily commodity

dependent countries. Countries whose fuel exports accounted for at least 85 per cent of total export earnings in 1979-1981 did not sizeably reduce their dependency on this single export commodity during the 1980s. By contrast, countries for which fuel exports accounted for 50 per cent or less generally further reduced their fuel-export dependency. Most countries heavily depending on one single food export commodity such as coffee, cocoa, fish and sugar or on a metal such as bauxite, copper or tin did not reduce their dependency either. However, whereas most developing countries for which the export of one specific metal accounts for the bulk of the country's foreign-exchange earnings export this metal in processed forms, this is not the case for countries that are heavily dependent on food export commodities.

85. In the cases where a country's single most important export commodity is an agricultural raw material such as cotton, wood or hides and skins, the dependency level is in general much lower, that is, not exceeding 50 per cent. In addition, most countries export part of these commodities in processed form. Export data also indicate that diamonds and gold have become substantial foreign-exchange earners for a variety of countries, diamonds even being the most important export commodity for three African and one South Asian country. However, as records of diamond and gold exports are often incomplete this evidence has to be interpreted with caution.

86. One of the concerns of the poorer nations among the heavily commodity-dependent developing countries is the share of their export earnings that must be spent on food imports. The evidence of the data available for 83 developing countries in the periods 1979-1981 and 1988-1990 suggests that for 57 of these countries the food-import to commodity-export ratio did not substantially change and that this ratio decreased for 12 countries (of which 5 are African and 2 of developing America). The data also suggest that 14 countries (half of which are African) needed a higher share of their commodity exports to pay for their food import bill. Five countries, Cape Verde, Gambia, Somalia, Kiribati and Tonga, even had to pay more foreign exchange for their food imports than they earned through commodity exports. These countries' situation is particularly discouraging if account is taken of the fact that all of them obtained close to or even more than 70 per cent of their export earnings through commodity exports. By contrast, other countries such as Indonesia, Malaysia and Thailand, for which manufactures contribute a much higher share in their total export earnings, spent less than 10 per cent of their commodity export earnings on food imports.

87. An important constraint for heavily commodity-dependent developing countries to diversify their economy both horizontally and vertically is the share of commodity export earnings they have to use for debt-service payments. Data in this respect suggest that 13 out of the 19 developing countries whose debt service payments absorbed more than 60 per cent of their commodity export earnings in 1988-1990 had a share of commodity exports in total export earnings of over 70 per cent.

88. While heavily commodity-dependent countries are particularly vulnerable to developments on world markets, they are mostly minor suppliers and,

therefore, have limited influence on such markets. Data on market shares of developing countries, for which three commodities account for more than half of total exports, indicate that in about 50 per cent of the cases their world market shares are less than 1 per cent. Fisheries are an example in this respect. Ten developing countries depend on this product for more than 20 per cent of their total export earnings, but none has a world market share of more than 1 per cent.

D. Developments in international assistance for commodity-dependent developing countries

89. Most developing countries will continue for many years to be heavily dependent on commodities for their domestic production, employment and export earnings while efforts to reduce dependency on a limited number of commodities through diversification will in most cases have to be based on inputs from the commodity sector. For this reason, it is crucial for developing countries to be able to develop viable projects in the commodity area, and these in turn require international assistance, in particular in the form of medium- and long-term financing. The international community has affirmed that adequate official bilateral and multilateral resources, as well as private resources, including private investment, are called for to finance appropriate diversification projects and programmes, as well as the promotion and development of resource-based industries, including commodity-related service activities, possibly through special facilities for these purposes. 20/

90. As already noted, the total amount of financial flows to developing countries decreased during the 1980s. In these circumstances many commodity-dependent developing countries had to rely on official development finance for a substantial part of their investments, and a relatively small proportion of this finance was directed to commodity-related export-oriented activities. 21/ Moreover, much of such finance for diversification that was available was concentrated on the larger, more diversified, less commodity-dependent countries where it is probably easier to develop projects. 22/

91. To develop and diversify their commodity production and exports, commodity dependent developing countries need finance not only for investment in productive facilities, but for all costs from the initial step of identifying the project right through to the production stage. They also need assistance in creating a supportive domestic environment, including development of related infrastructure, support services and human resources, as well as for resource assessment, pre-feasibility, feasibility and market studies and for the identification of economically viable projects attractive to foreign investors.

92. International agencies and among them primarily the World Bank group (the World Bank and the International Finance Corporation (IFC)) together with regional development banks have been the main source of international finance for commodity-related projects in developing countries. The World Bank

project lending over the past decade has largely concerned food commodities and traditional export crops and there has been very little assistance in the area of minerals. IFC, through its loans and equity participation, together with regional development banks, have been the main sources of international finance to the promotion of private sector development. Regional and subregional development banks have provided assistance mainly at sectoral and project level. In 1989 the Inter-American Investment Corporation was established by the Inter-American Development Bank (IADB) and the Asian Finance and Investment Corporation by the Asian Development Bank. Both these corporations operate on the same lines as private investment banks. The African Development Bank has recently set aside US$ 200 million for the development of its private sector lending arm. In addition, these regional banks have increased lending to the private sector through national development finance institutions.

93. The World Bank, regional development banks and bilateral aid agencies have been the main sources of international support for infrastructure in the form of long-term low-interest loans and grants. A large number of technical assistance projects executed in developing countries were financed totally or partially by the resources of the United Nations Development Programme (UNDP), the World Bank and regional development banks. Several other multilateral institutions, while not actually financing investment, provide financial and other assistance for pre-investment activities related to the development of projects in the commodity area.

94. EEC finances projects in the African, Caribbean and Pacific (ACP) countries out of the European Development Fund and by loans from the European Investment Bank, which also provides finance for development assistance to Mediterranean countries. The Centre for the Development of Industry of ACP-EEC provides technical assistance in order to present project ideas and promote potential projects that have sponsors behind them.

95. Bilateral donors, who contribute the major component of official financial flows to developing countries, do not, on the whole, provide commodity-specific assistance.

96. It has been recognized by the international community that international financial assistance is crucial to helping developing countries, in particular the least developed countries, cushion the impact of shortfalls in their commodity export earnings on their social and economic development. The incidence of shortfalls in commodity exports has risen sharply since the early 1980s, as a result of falling world prices for major commodities and increasing demand and supply fluctuations. Virtually all developing countries experienced sustained or recurrent shortfalls in the period 1980-1989. The highly commodity-dependent countries have been the most affected. The least developed countries accounted for 11 per cent of total non-fuel commodity shortfalls, proportionally greater than their 7 per cent share in developing country non-fuel commodity exports between 1980-1989.

97 Traditional compensatory finance has undergone considerable changes in the recent period. Drawings under the Compensatory and Contingency Financing Facility (CCFF) of the International Monetary Fund (IMF) have fallen considerably; in 1989, there were four drawings amounting to SDR 808 million and in 1990 there were only two drawings totalling SDR 68 million. Also drawings under the CCFF have tended to become part of IMF's overall package of balance-of-payments assistance for developing countries, often in the form of a quick disbursing first part. Since these drawings carry the normal IMF interest rate charges, IMF has encouraged poorer developing countries to make greater use of the cheaper lending conditions available under the Structural Adjustment Facility (SAF) and the Enhanced Structural Adjustment Facility (ESAF). In response to disturbances in the oil market in 1990/91, an oil import facility was temporarily added to the compensatory element, operating in a similar way to the cereals import facility. In 1991, six developing countries and five Central and Eastern European countries made 17 drawings under the compensatory element of the CCFF, the highest number of drawings since 1983. Of the SDR 2.9 billion drawn, funds for excess oil imports accounted for SDR 2.2 billion and the countries of Central and Eastern Europe accounted for nearly 40 per cent of total drawings.

98. The STABEX scheme of the ACP-EEC Lomé Convention provides compensatory finance to ACP countries in respect of their export earnings shortfalls in trade in specific agricultural products with EEC. While most transfers are used in the sector suffering a shortfall, where appropriate, they can be used for diversification to other agricultural activities or for the processing of agricultural products. Being part of the ACP-EEC conventions, STABEX is by its nature limited in terms of its country, product and trade coverage. Its resources were ECU 925 million (SDR 815 million) for the five-year period 1986-1990 and were increased under Lomé IV to ECU 1.5 billion (SDR 1.4 billion) for the period 1991-1995. Total transfers in STABEX for the period 1980-1990 amounted to SDR 2.2 billion, and STABEX ran out of money in three consecutive years in the mid-1980s. Under Lomé IV, all STABEX transfers will be in the form of grants. Total eligible shortfalls for 1990 amounted to approximately 1.2 billion ECU (SDR 1.1 billion) of which 86 per cent were accounted for by coffee and cocoa. For these shortfalls, 33 countries actually received transfers amounting to ECU 384 million (SDR 360 million), or a coverage of about 30 per cent of shortfalls. A similar lack of adequate funds is being experienced for shortfalls in 1991.

99. The EEC scheme STABEX-LDC-ALA (for least developed countries not signatories to the Lomé Convention) was established in 1987. Between 1987 and 1991 four countries received 19 transfers for a total amount of ECU 33 million (SDR 29 million), with Bangladesh accounting for nearly 60 per cent of these transfers. All the transfers have been used in the sectors suffering the shortfall, and none for diversification. The most common uses specified for transfers have been infrastructural improvements, trade promotion, research and development, product development, quality improvements, training and the provision of extension services. The STABEX-LDC-ALA scheme expired at the end of December 1991.

100. The SYSMIN scheme of the Lomé Convention provides financial assistance in the form of low-interest loans to countries experiencing difficulties in their mining sectors. The main aims of SYSMIN are to safeguard the mining sectors by actions to alleviate adverse effects of declines in their production or exports. In addition, for countries heavily dependent on exports of one mining product, it is designed to help diversification, notably by helping them complete development projects and programmes under way where these are seriously jeopardized owing to substantial falls in export earnings from that product. Since Lomé II, ECU 1.3 billion has been allocated to SYSMIN, with actual transfers amounting to ECU 587 million. Under Lomé IV ECU 480 million (SDR 450 million) has been allocated to SYSMIN and a total of three requests for transfers (from Namibia, Zambia and the Dominican Republic) have been received. No decisions have been taken on the eligibility of these requests, so no amounts have been fixed for transfers.

101. Switzerland established its own compensatory programme in 1988 to compensate the least developed countries for shortfalls in selected commodities exported to Switzerland. Since 1988, a total of SwF 90 million (SDR 49 million) have been allocated, of which SwF 47.6 million (SDR 25 million) have been transferred.

102. It is clear that funding for developing countries experiencing commodity export earnings shortfalls has been insufficient. The Trade and Development Board, at its sixteenth special session, noted that "there was generally a significant difference between estimates of the size of total commodity export earnings shortfalls experienced by developing countries and the finance made available under existing compensatory financing facilities". 22/

IV. DEVELOPMENTS IN MARKET ACCESS FOR COMMODITY PRODUCTS

Market access conditions and progress in the Uruguay Round on tropical products, natural-resource-based products and agriculture

103. At the eighth session of UNCTAD, held at Cartagena, agreement was reached on the urgency of achieving improvement in market access conditions for commodities through the progressive removal of barriers that restrict imports, particularly from developing countries, of commodity products in primary and processed forms, as well as the substantial and progressive reduction of types of support that induce uncompetitive production, such as production and export subsidies. The Conference further agreed that improved market access, through a successful conclusion to the Uruguay Round of multilateral trade negotiations, will contribute to a favourable international trading environment.

104. The urgency of improving market access conditions contrasts with the slow pace of developments in the Uruguay Round in the area of tropical, natural-resource-based and agricultural products.

105. In the case of tropical products, despite the various contributions (autonomous or negotiated, including under the generalized system of preferences) that were made since the mid-term review of the Round at Montreal in December 1988, improvements in market access have been very limited. Moreover, in terms of direct trade effects, offers submitted on tropical products by major industrialized trading countries 24/ would create additional trade equivalent to only a 1.7 per cent rise in developing countries' exports of the corresponding products to those markets. Because of the most favoured nation nature of the offers made, industrialized countries would also benefit and existing preferential margins enjoyed by developing countries would be eroded. Trade losses may actually occur for some developing countries.

106. Progress on negotiations aimed at achieving the "fullest liberalization" of trade in tropical products has been delayed owing mainly to the linkages of these products with those in the agricultural sector in which there is a negotiating impasse, and also because of the calls for reciprocity made by the developed countries.

107. Little progress has been achieved in market access conditions affecting natural-resource-based products such as fisheries, forestry and mineral and metal products. This is due, on the one hand, to attempts by some developed countries to link a reduction of tariff and non-tariff measures with issues covering access to supplies, particularly fishery rights; and on the other, to attempts by these same countries to extend the product coverage beyond that already agreed for the Round, in particular to include energy-related products. Moreover, and in terms of future trade prospects, erosion of preferential margins due to liberalization of most favoured nation status may limit potential trade benefits. As a recent simulation exercise of tariff

cuts has shown, 25/ while world trade in natural-resource-based products would grow by US$ 23 million, the developing countries would account for only a quarter of such an increase. Their largest gain would be in fishery products, followed by forestry products, but a net loss would occur in mineral and metal products. A net loss was even found in the case of African countries as a whole in all three product categories, with the biggest loss in fishery products.

108. In the case of agricultural products, the issue is not only one of market access and border protection, since the international market for these products is also affected by internal support policies (subsidies in various forms to domestic producers) and export subsidies.

109. The magnitude of the problem is well illustrated by the huge amount of transfers to farmers. Estimates of producer subsidy equivalent (PSE) 26/ for major farm commodities (e.g. grains, meat, dairy products and sugar) by the OECD secretariat indicate that transfers to farmers in OECD countries in 1990, at about US$ 180 billion, were the highest of the decade, with producers obtaining about half of their agricultural income from these transfers. The figure for 1991 was US$ 177 billion. 27/ In general, total and percentage PSEs for OECD as a whole in 1991 remained significantly above their averages for the period 1979-1986. Such internal support policies are continuously raising domestic production higher than it would otherwise be, thus reducing domestic demand for imports or leading to higher export availability in the markets of the industrialized countries, which have the greatest impact on the world market because of their importance in international trade in the products in question.

110. Export subsidies have been a major source of disputes in agricultural trade in recent years since they can result in lower world market prices and be used to capture a market share. The share of export subsidies in the 1986-88 average levels of agricultural support (in terms of PSEs) in six OECD countries (Australia, Canada, EEC, Japan, New Zealand and the United States) ranged from 0.3 per cent in New Zealand to 43.7 per cent in EEC. 28/

111. The Uruguay Round of multilateral trade negotiations has provided the framework in which efforts are being made to achieve fundamental reform of world agricultural trade. In fact, the success or failure of the Round will depend, to a large extent, on the ability of the negotiators to establish more effective multilateral disciplines over trade in agricultural products. With the reconvening of the Trade Negotiating Committee at Geneva on 26 February 1991, a decision was taken to relaunch the process of negotiation with the aim of achieving specific binding commitments on domestic support, market access and export competition; to reach an agreement on sanitary and phytosanitary issues; and to begin technical work immediately to facilitate the negotiations. In June 1991, the Chairman of the Negotiating Group on Agriculture presented some options for each of the areas. Following extensive negotiations, the Director-General of GATT and Chairman of the Trade Negotiation Committee presented on 20 December 1991 a draft final act covering all issues in the Uruguay Round, including agriculture.

112. On 13 January 1992, the Trade Negotiation Committee reconvened and a plan of work was approved with a view to bringing the negotiations to a successful conclusion. Despite considerable efforts, it was not possible at the end of April 1992 to reconcile positions regarding the outstanding issues under negotiations, including agriculture, although contracting parties reaffirmed their commitments to continue negotiations to bring the Uruguay Round to a successful conclusion. Quick progress is needed, however, to ensure that the terms of any new GATT agreement could be incorporated in national legislation and effectively implemented from 1 January 1993.

V. MANAGEMENT OF NATURAL RESOURCES IN THE CONTEXT OF SUSTAINABLE DEVELOPMENT

Commodity/environment linkages and related developments in the management of natural resources

113. The recent period has witnessed an increasing emphasis in both developing and developed countries on environmental concerns and the sustainability of development. In the developing countries the basic issue is to eradicate poverty and to increase employment and exports while preserving and protecting the environment. In the developed countries, which are responsible for most of the global pollution, the challenge is to restore the environment while maintaining, as much as possible, lifestyles and productive activities.

114. The commodity sector is inextricably linked with the achievement of these goals because minerals, fishery and forestry resources are commodities themselves and agriculture, the largest source of commodity production, is fundamentally dependent on natural resources, and in particular, land and water.

1. Mining

115. Pollution and the need for land reclamation are the principal environmental effects of mining operations. In most cases, the area covered by environmental damage is comparatively small but the effects are important because of their intensity and severity. Also, these effects can be transported to other areas by rivers, seas, or wind. For example, recently in Brazil high levels of mercury contamination due to gold mining were found in fish as far as 180 kilometres downstream of the mining areas.

116. An important aspect of the impact of mining on the environment is that poor environmental practices have only a limited effect on production in the sector itself although they can negatively affect the health of the mining population. Nevertheless, self control in terms of environmental management is less of an economic necessity for the mining industry as compared, for example, with agriculture. Regulatory measures are, therefore, indispensable for inducing environmental management. Monitoring and enforcing such measures is as important as setting them.

117. Measures such as charges, taxes and other regulations forcing the mining firms to act in a specified manner, for example, to reclaim land, entail additional costs for the mining firms. It has been estimated that increasingly stricter environmental regulations may add up to 15 per cent, in real terms, to the cost of copper production and 12 per cent to that of aluminium production by 1995.

118. Stricter environmental regulations also act as a barrier to entry to the industry. This effect is important for local firms in developing countries and for small firms in general. By contrast, big transnational companies that are already operating in countries with tight regulations often already have the technology that meets new standards. Stricter environmental regulations are likely to have a more negative effect in terms of costs on the adaptation of existing installations.

119. On the other hand, environmental protection does not always have to be accompanied by higher costs. Productive efficiency often leads to environmental efficiency, as well as being a prerequisite for it. Some cost saving innovations include environmentally preferable practices. For example, recently installed bacterial leaching in Chile prevents acid water pollution and at the same time allows lower grade ores to be used. Similarly, cost savings have been realized in the aluminium industry when measures were introduced to reduce fluoride emissions.

2. Fisheries

120. Over the last 20 years, the annual world catch of aquatic resources has increased from less than 70 million tons to about 100 million. In line with this growth, over-use of marine resources and only limited appreciation of their complex interdependence has resulted in inadequate conservation and resource management, leading to depletion. Biological degradation and disturbances of the delicate food chains also caused significant harm to fish stocks. Globally, average annual fish catch is just below its estimated sustainable yield. However, in several of the world's major fisheries (the Pacific north-west, the Mediterranean and the Black Sea, the eastern Indian Ocean and south-east Pacific) sustainable yields have been surpassed.

121. The utilization of drift nets, which is being increasingly restricted, has been an important element in the threat to the aquatic environment and its biological diversity. In this regard, fishing legislation is changing in many places, from Oman to the EEC, allowing only nets with bigger mesh sizes than before.

122. In recent years, aquaculture has been providing an increasing part of world fish supplies, with 80 per cent of the reported aquaculture products coming from Asia. While this contributes to the preservation of marine fisheries, it brings its own environmental problems. In shrimp farming, for example, these include the clearing of mangroves, extensive harvesting of wild larvae and indiscriminate use of antibiotics.

123. At the end of the 1970s, the extension of national jurisdiction over fishery resources to exclusive economic zones of 200 miles gave coastal States the opportunity to develop and to manage fisheries in their interest rather than having to compete with other nations for a share of the resources lying off their coast. This could have contributed significantly to the sustainability of the resource base, but it has been unsatisfactorily exploited by developing countries because of poor research data, inadequate resource monitoring, absence of control and surveillance capabilities, as well as lack of sufficient trained personnel and an ever pressing need for hard currency from their natural resources. As a result, the extension of national jurisdiction had a more favourable impact on conservation of fishery resources in developed countries than in the developing countries. In 1977, in Chile, a series of incentives were introduced and a free market approach was adopted to attract foreign capital and promote quick development of the fishery sector. These measures led to an expansion of foreign factory trawler operations and a spectacular growth of catches and exports. As a result, however, many valuable species were overexploited and restrictions had to be imposed.

124. In the developed countries, where access to the exclusive economic zones was more limited for foreign fleets, domestic fishing industry expanded and has recently led to severe overcapitalization of fleets catching certain species. In EEC, discussion is under way on reducing the size and capacity of both the Community fleet and the processing industry as a whole in order to match resources better. Technical measures for the protection of marine resources have recently been agreed (e.g. reduction of the length of drift nets).

125. International fishery cooperation agreements and joint fishing ventures have the potential to improve the management of world fishery resources. However, only a few of them address the conservation and resource management issues and include sufficient incentives in this regard. They often emphasize foreign fishing rights and quick monetary compensation schedules, rather than coastal countries' resource conservation and management concerns. Recent initiatives to improve the developing countries' performances in this regard include the intention of the Economic Community of West African States (ECOWAS) to harmonize the international fishery cooperation policies of 13 member States and to introduce coordinated aquatic resource conservation measures at the subregional level.

3. Forestry

126. Tropical forests are mostly located in the developing countries. They are almost entirely natural forests and the annual rate of deforestation, which has increased by about 50 per cent between 1980 and 1990, is currently estimated at around 17 million hectares.

127. Tropical forests are a valuable and renewable natural resource, which can serve as a basis for the development efforts of many developing countries. In addition, they attract global interest in as much as they act as a carbon sink and as a repository of biodiversity and genetic heritage.

128. Global tropical forest loss as a result of logging is a relatively minor part of total deforestation. Close to two thirds of deforestation is attributable to the conversion of forest land to agriculture. The more profitable the exploitation of timber, the less likely its conversion to other uses and the more important becomes sustainability and preservation of the resource base for the owners of the forest. Increased productivity in agriculture may also help in forest conservation by reducing the need for additional land.

129. Although relatively small on a global scale, damage to tropical forest resources caused by commercial logging of natural forests is very important locally and nationally. This damage and the actual forest loss is considerably bigger than the wood volume extracted from the forest. For example, it has been estimated that almost six times more trees are damaged than are felled for timber during extraction operations of commercially favoured species. Guidelines exist for reducing this damage but implementation is constrained by the institutional weaknesses in the forestry departments of many developing countries.

130. The institutional organization of logging from natural forests is based on the concession system. Sometimes the duration of concessions are much shorter than forest rotation. In such cases, the firms have little interest in the sustainability of the forest resources and even less so in biodiversity and the maintenance of the balance of the ecosystems. Although the terms of the concession may stipulate that certain logging practices be used and specify the loggers' obligation for post-harvest treatment, the enforcement of these conditions is often inadequate. It may be preferable to have concessions extending over longer periods of time or to have extensions based on performance. Improving the control and enforcement capacities of forestry departments is also crucial.

131. As in other sectors, further processing of the raw material before export provides additional revenues to the exporting countries. In the 1980s, some developing countries, in particular Indonesia, which imposed a ban on log exports, have increased exports of processed wood mostly in the form of plywood. The benefits to developing countries of further processing are constrained, however, by the relative inefficiency of the industry. Wastage of wood is also high, leading to more logging than is strictly necessary. Therefore, increasing efficiency in the wood-processing industry, particularly in the manufacture of plywood, in the developing tropical-timber-producing countries, should contribute towards resource saving and provide greater benefits to these countries.

132. The 1990 decision by EEC on the conservation of tropical forests envisages import restrictions on non-sustainably produced tropical timber coupled with technical and financial support for the preparation of national forest management and conservation plans.

133. In the same vein, one of the objectives in the present International Tropical Timber Agreement is to encourage the development of national policies aimed at sustainable utilization and conservation of tropical forests and

their genetic resources, and at maintaining the ecological balance in the regions concerned. 29/ Apart from carrying out a large number of projects in reforestation and forest management in the producing member countries, the International Tropical Timber Organization has adopted guidelines for sustainable management of tropical forests. Its approach is to use incentives at the forest level and in trade to promote sustainable management of tropical forests.

4. Agriculture

134. In recent years the development of agricultural production has been characterized by the substitution on an ever greater scale of human labour and natural biological processes by the use of inputs of a non-agricultural origin. The utilization of energy and artificial fertilizers and the use of the different plant-protecting agents and herbicides are now increasingly decisive in the growth of agricultural production. This is raising complex issues concerning the relations between agriculture and the natural environment.

135. Agricultural production contributes to environmental problems through pollution due to over- and mis-application of external inputs such as chemical fertilizers and pesticides and through the depletion of natural resources as a result of erosion or the degradation of the soil.

136. The main question related to the environmental impact of chemical fertilizers is up to which level they can be applied without doing irreversible or unacceptable harm to the environment. Successful intensification will need to combine soil management with greater use of inputs, particularly inorganic fertilizers, which provide about 40 per cent of nutrients for the world's crops. In sub-Saharan Africa grain yields average about a third of those of East Asia. Differences in land quality are part of the reason, but so too is sub-Saharan Africa's low fertilizer use - less than one-fifth of East Asia's average. In the developing world, low use rates and the consequent decline in soil nutrients are far greater problems than excessive and poorly managed fertilizer applications. 30/

137. Given negative environmental consequences associated with over-intensive use of fertilizers, however, it is important to assess whether and to what extent alternative farming systems can be introduced that still maintain or increase agricultural output. The use of biological processes for fertilization - nitrogen-fixing plants, crop rotations, use of trees as "nutrient pumps", and recycling of organic waste - could be extended far beyond current levels.

138. Pesticide use, which also contributes to pollution, has increased dramatically in recent decades, particularly in industrialized countries and in large-scale modern export-oriented agricultural production in developing countries, as insect pests are inherent in large-scale monocultures which destroy the natural balance that would keep them in check.

139. Pesticides differ with regard to the level of toxicity and their level of environmental persistence. Twelve of the world's most hazardous pesticides, known as the "dirty dozen", are banned or severely restricted in industrialized countries, but continue to be used in many developing countries.

140. Since the effects of overusing pesticides have begun to be widely understood, several policies have been followed. Pesticides are now formulated, as far as possible, to target particular pests. Their toxic life is shorter, to reduce accumulation in the environment. Some Governments are eliminating subsidies for pesticides or are even taxing them, thus signalling to farmers that pesticide use has environmental as well as financial costs. 31/

141. Erosion, land degradation and the exhaustion of groundwater are ways in which natural resources are depleted as a result of agricultural activity. Land degradation can occur through human interference and natural processes that would have occurred anyhow. Land systems that degrade easily and do not respond to land management should not be interfered with by agricultural (and other) activities. Otherwise, depletion will be unavoidable. Land claimed by burning tropical forests often turns into such fragile land.

142. After some decades of green revolution and "chemicalization" and "industrialization" of agriculture, environmental issues are gaining importance on the agronomical research agenda. At the frontier of agricultural technology many traditional techniques for sustainable agriculture are being re-evaluated and supplemented with innovative elements. The intention is to replace chemical technology with management skills. Increasing attention is given to bio-engineering of crop varieties and the development of non-chemical forms of pest management, biodegradable pesticides, integrated plant nutrition systems with "green" fertilizers to replace partially chemical fertilizers, introduction of low-input varieties, mulching, integration of cultivation, grazing and forestry (agro-forestry), and optimization of irrigation techniques so that better use is made of available water resources. The experience of China since 1985 with eco-farming has been highly encouraging. 32/ Agronomic and agrobiological knowledge on these issues is growing quickly and there is much scope for cooperation among developing countries.

143. From the preceding, it seems clear that markets, as they function today, are not effective in ensuring sustainability and optimizing natural resource use. New instruments are needed that provide incentives for environmentally preferable practices and disincentives for others. These instruments may be regulatory or market-based. Each type has its own advantages. As information needed for assessing environmental damage due to commodity production is scant, data collection and analysis from the local to the global levels is a prerequisite for policies, both regulatory and market-based.

144. At its eighth session, UNCTAD identified some subjects that could be pursued in the area of natural resource management and sustainable development. These issues are also reflected in Agenda 21, adopted at the

United Nations Conference on Environment and Development, in whose implementation UNCTAD is to be involved, taking into account the importance of the interrelationship between development, international trade and environment and in accordance with its mandate in the area of sustainable development.

Notes

1/ After growing by 1.2 per cent in the 1970s, the per capita food consumption growth rate dipped to a very low rate of 0.2 per cent in the 1980s.

2/ When deflated by the unit value index of manufactured goods exported by developed countries.

3/ The price index of the principal non-fuel commodities exports by developing countries fell by 32 per cent in real terms between 1979/81 and 1988/90.

4/ For the group of countries where non-fuel commodity exports account for more than 70 per cent of total non-fuel export earnings, cumulative commodity sector shortfalls in the 1980s represented the equivalent of seven months of total export earnings (much higher than for other groups).

5/ Developing countries' commodity export earnings fell dramatically from an annual average of US$ 405 billion during the period 1979/81 to US$ 271 billion in 1987/89. West Asia accounted for most of this drop, Africa's export earnings declined 40 per cent, while in South and South-East Asia, as a result of a strong growth in new and traditional commodity exports, commodity export earnings grew slightly.

6/ Twenty out of 31 countries in developing America and 39 out of 47 African countries are dependent on only two commodities for over half of their export earnings.

7/ See "UNCTAD VIII, Analytical report by the UNCTAD secretariat to the Conference" (TD/358, February 1992).

8/ World Bank, World Development Report 1991 (Washington, D.C., 1991), chap. 4, pp. 70-87.

9/ Most of these techniques are available from the Cocoa Research Institute of Ghana (Financial Times, London, 2 June 1992).

10/ World Bank, Sri Lanka: Strengthened Adjustment for Growth and Poverty Reduction (Washington, D.C., 1992).

Notes (continued)

11/ The dynamics of cocoa yield are an exception. In fact, yields in the Far East increased half as fast as in the other cocoa producing countries in the 1980s. It needs to be stressed, however, that the absolute level of yields in the Far East is more than twice as high as in the other regions. Moreover, the absolute amount of the yield increase in South-East Asia was almost 40 per cent higher than the average of all producing countries in the 1980s.

12/ The high levels of fertilizer employment in South and South-East Asia attained in recent years must almost be regarded as taking the effects of enhanced input use to the other extreme where soil quality will be put in jeopardy.

13/ The Economist, London, 9 March 1991, p. 88.

14/ In May last year, Shell Oil Company, based on computer images, for example, discovered the second largest domestic oil deposit in the United States, about 130 miles south of New Orleans (Business Week, 10 June 1991).

15/ UNIDO, Technological alternatives for copper, lead, zinc and tin in developing countries (ID/WG.470/5, Vienna, 1987), p. 13.

16/ Electric steel making accounts for about 30 per cent of total steel production. The average amount of energy absorbed by the steel industry in most steel-producing countries usually ranges from 5 to 15 per cent of the nation's total energy consumption (ILO, Recent Developments in the Iron and Steel Industry, Report I to the 12th Session of the Iron and Steel Committee, Geneva 1992, pp. 27-30).

17/ A. Warhurst, "Metals Biotechnology for Developing Countries and Case Studies from the Andean Group, Chile and Canada", Resources Policy, vol. 17, No. 1 (March 1991), pp. 54-68.

18/ A case in point is Ghana's Economic Recovery Programme of the 1980s, which gave prime emphasis to expanding cocoa exports, leading, however, to lower international prices and lower foreign exchange earnings.

19/ For example in South-East Asian countries, apart from Maldives and Myanmar, as well as Argentina, Belize, Costa Rica, the Dominican Republic, El Salvador and Guatemala in developing America; Mauritius, Morocco and Tunisia in Africa; and Fiji in developing Oceania.

20/ See paragraph 202 of the Cartagena Commitment of the eighth session of UNCTAD.

Notes (continued)

21/ In 1984-1988 annual resource flows from main international and regional financial institutions to commodity-related diversification activities with some export orientation in developing countries represented approximately 5 per cent of total commitments of these institutions (TD/B/C.1/AC/12, para. 42).

22/ For country distribution of lending of major international and regional development banks, see ibid., table 2.

23/ See TD/B/1256 (vol. 1), p. 1, para. 4.

24/ Including Australia, Austria, Canada, EEC, Finland, Japan, New Zealand, Norway, Sweden, Switzerland and the United States.

25/ The simulation was carried out using the UNCTAD Trade Policy Simulation Model, introducing the tariff cuts outlined in the 16 November text of the Chairman of the Negotiating Group on Natural Resource Products. See analytical report by the UNCTAD secretariat to the eighth session of the Conference (TD/358, New York, 1992), para 265.

26/ The producer subsidy equivalent is an aggregate measure, in monetary terms, of all transfers to farmers affected through domestic support programmes and trade measures.

27/ In absolute terms, EEC (US$ 84 billion), and the United States (US$ 35 billion) accounted for the bulk of farm support in the OECD area in 1991. On a percentage basis, Switzerland, Norway, Finland and Japan have the highest rates of assistance (over 65 per cent). New Zealand (4 per cent) and Australia (15 per cent) have the lowest rates. Estimates of PSEs for specific commodities, expressed as a proportion has been quite high for products such as sugar, cereals and meat, that are of major trade interest to many countries. See OECD, Agricultural Policies, Markets and Trade: Monitoring and Outlook 1992 (Paris, 1992).

28/ See OECD Economic Studies, "Modelling the Effects of Agricultural Policies", No. 13, winter 1989-90, table 2, p. 137.

29/ International Tropical Timber Agreement, 1983, article I, objective (h).

30/ World Bank, World Development Report 1992, p. 138.

31/ Ibid., 1977, p. 140.

32/ Qu Geping, "The review and prospects of eco-farming construction in China", China Environmental Science Press, 1991.

ANNEX I

Terms of reference of the Standing Committee on Commodities

Pursuant to General Assembly resolution 1995 (XIX), as amended, and to "A New Partnership for Development: the Cartagena Commitment", adopted at the eighth session of the United Nations Conference on Trade and Development, a Standing Committee on Commodities is established by the Trade and Development Board with the following terms of reference:

1. To promote sound, compatible and consistent policies, which, inter alia, take into account market trends, at national and international levels in the commodity field.

2. To undertake periodic and global reviews, studies and analyses of the situation of, and prospects for, commodities, and to compile statistical reports on commodity production, prices and trade.

3. To undertake analyses and identify approaches on commodity policies, bearing in mind both, as appropriate, Conference resolution 93 (IV) and the particular characteristics and situation of individual commodities, including the particular problems of the least developed countries. This work should help to achieve the following:

(a) Improving the functioning of commodity markets by reducing the distortions affecting supply and demand;

(b) Optimizing the contribution of the commodities sector to development by, inter alia, working towards greater cost-effectiveness and productivity, thereby enhancing competitiveness;

(c) Reviewing and comparing national policies with the aim of enhancing the competitiveness of the commodity sector, taking into account market trends;

(d) Achieving a gradual reduction in excessive dependence on the export of primary commodities through horizontal and vertical diversification of production and exports as well as crop substitution, within a macroenomic framework that takes into consideration a country's economic structure, resource endowments and market opportunities;

(e) Progressive removal of trade barriers, i.e. trade liberalization, for commodity products;

(f) Improving market transparency;

(g) Exploring the links between commodity policies, sound management of natural resources and achievement of sustainable development;

(h) Exploring greater use and efficiency of various mechanisms for risk management, having in mind the objective of minimizing the risks arising from commodity market fluctuations, including market-linked price-hedging mechanisms such as commodity futures and options and related longer-term mechanisms such as commodity swaps, bonds and loans, obstacles to their potential use and modalities for overcoming them;

(i) Analysing problems stemming from commodity-related shortfalls of developing countries and reviewing developments in the field of compensatory financing of export earnings shortfalls.

4. To facilitate and coordinate activities of bodies involved in the commodity field.

5. To follow and facilitate, as appropriate, intergovernmental consultations and action among interested countries on the problems of particular commodities or groups of commodities; to analyse the need for, and encourage when considered necessary, the achievement of viable and efficient international agreements or arrangements that take into account market trends, as well as study groups, both autonomous and within UNCTAD.

6. To assist the Board in assessing the question of a world conference on commodities as provided for in the decision "World Commodity Conference" adopted at the eighth session of the Conference.

7. To assist it in its work, the Committee may have, as subsidiary organs, the Intergovernmental Group of Experts on Tungsten and the Intergovernmental Group of Experts on Iron Ore.

8. To deal with other items within the field of commodities directed to it by the Board.

9. The work of the Committee should follow a progressive sequence in accordance with paragraphs 49 to 60 of the Cartagena Commitment. In line with what is set out in the Cartagena Commitment, particularly paragraphs 18 and 47, the Committee should be inspired by the need to promote international consensus on principles and strategies for policy action at the national and international levels to enhance the development prospects of member States, particularly those of developing countries. It should provide a forum for the exchange of experiences among member States so as to enable them to draw appropriate lessons for the formulation and implementation of policies at the national and international levels and for international economic cooperation.

10. [illegible] its work, the Committee should take due account of the diversity of country situations and experiences. It may base its work on country reviews by the secretariat and seek from relevant countries the presentation of studies on their national experiences. It could also, depending on the issue, seek the participation of, and draw on the experience and expertise of, non-governmental actors, particularly enterprises, trade unions, the academic community and non-governmental organizations, as well as representatives of international institutions.

11. The Committee should identify for consideration areas in which technical cooperation should be strengthened.

12. The work of the Committee should be coordinated with that of other Committees and Working Groups.

13. The work of the Committee should complement that of other international bodies while seeking to ensure that no duplication occurs.

14. The Committee may recommend for the consideration of the Board the establishment of expert groups.

15. The Committee shall submit periodic reports to the Trade and Development Board on its work. In accordance with paragraph 68 of the Cartagena Commitment the Board will conduct a review and evaluation of the work programme of the Committee midway between Conferences.

16. The frequency of sessions of the Committee is to be decided by the Board in accordance with the existing procedures concerning the calendar of meetings. The duration of the sessions should be of five days or less.

ANNEX II

Main features of the International Sugar Agreement, 1992

The objectives of the International Sugar Agreement, 1992 are:

(a) To ensure enhanced international cooperation in connection with world sugar matters and related issues;

(b) To provide a forum for intergovernmental consultations on sugar and on ways to improve the world sugar economy;

(c) To facilitate trade by collecting and providing information on the world sugar market and other sweeteners;

(d) To stimulate demand for sugar, particularly for non-traditional uses.

The International Sugar Organization is maintained for the purposes of administering the Agreement and supervising its operation. The Organization shall continue to act as a centre for the collection and publication of statistical information and studies on world production, prices, exports and imports, consumption and stocks of sugar (including both raw and refined sugar) and other sweeteners, as well as taxes on sugar and other sweeteners.

The agreement does not contain measures aimed at regulating price levels but the International Sugar Council, which is the intergovernmental decision-making organ of the International Sugar Organization, may study the feasibility of negotiating a new international sugar agreement, including a possible agreement with economic provisions.

The major difference between the new agreement and the previous international sugar agreements is the introduction of a single list of members for the purposes of calculation of votes and members' contributions to the administrative budget of the Organization.

A new element of the agreement is the creation of an administrative committee consisting of 18 members, 10 largest financial contributors plus 8 members elected from the remaining membership of the Council.

The new Agreement provides that the Internaional Sugar Organization should take full advantage of the facilities of the Common Fund for Commodities. New provisions include an article whereby due consideration should be given to environmental aspects in all stages of sugar production.

It is intended that the new Agreement will come into effect on 1 January 1993 for a period of three years, with a possibility of extending it for successive periods each of two years. It will enter into force definitely when instruments of ratification, acceptance, approval or accession will have been deposited by States holding 60 per cent of the votes as distributed by the Agreement.